COAL AGE

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C. E. LESHER AND R. DAWSON HALL, *Editors.*

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Associations Further Business Co-operation

DESPITE the criticism that has been heaped upon trade associations and the disinclination of the Department of Justice to attempt to clarify the situation prior to the decision of the Supreme Court in the hardwood lumber case, the Department of Commerce is actively championing the trade-association idea. Secretary Hoover and members of his staff are taking pains to show that the questionable conduct of a few trade associations, or aggregations calling themselves trade associations, has resulted in uncharitable criticism of all trade organizations. Mr. Hoover has expressed himself so definitely on the subject that there can be no doubt that he believes trade associations are necessary to the maximum progress of industry. The rapid multiplication of trade associations until they number nearly 3,000 is interpreted by Mr. Hoover to indicate "a great and vital movement and something permanent in our economic system."

Mr. Hoover also said that "The coming together of manufacturers and producers in the different trades for the purpose of the advancement of their industries as a whole is a profound step toward co-operation in the whole business world. Out of it will be gained tremendous benefits for the business public. The various trade associations present a point of contact with the government such as did not exist ten years ago. I know of no way in which we can undertake the solution of collective questions except by the co-operative organization of the men in the industry. We cannot go on maintaining our standard of living in the face of foreign competition unless we can make some progress in the collective sense. The only way that we can hope for it is through the organization of associations that will take up the problems common to all, that gain inch by inch the efficiency and stability that make for national efficiency."

Banishment of the Check-Off at Issue

SETTLING wage questions by legal processes has its disadvantages. No sooner had Federal Judge Anderson at Indianapolis decreed that the check-off is illegal and enjoined its use, the union operators more or less generally accepted the mandate of the court and announced their decision to discontinue collecting the sinews of war for the United Mine Workers, and the mine workers begun to strike, than the Federal Court of Appeals at Chicago suspended the temporary injunction, leaving the question still to be settled.

The events of last week point to one thing above all others. The majority of the operators having contracts with the United Mine Workers are willing, even anxious, to throw overboard the check-off system. Whatever the courts finally decide, whatever be the disposition of the legal issue raised by the Mingo operators and Judge Anderson, there can be no doubt that the check-off is under the fire of more than the court.

Technically the question before the courts relates to the alleged conspiracy between operators and miners in certain fields to organize other fields. The check-off simply is held to be a means to that end and an evidence of alleged unlawful intent. But before a court of wider jurisdiction—the bar of public opinion—the whole question of the check-off is brought to the forefront.

The check-off as a practice is on trial. Begun some twenty years ago as a means of paying out of miners' coal the wages of their checkweighman, it has extended to cover all employees and for every conceivable classification of expenditure. Operators, ten years ago sectional in their viewpoint, today view with alarm the outgrowth of the check-off system that compels them to pay tribute in one field that the mine workers' organization may have funds to force the unionization of their mines in another field.

In what respects has the check-off failed? Why are the operators ready to abandon it? Although by this means millions of dollars have poured into the treasury of the international organization there still remain large and important areas of non-union territory. The major portion of West Virginia, eastern Kentucky, Alabama and important parts of Pennsylvania are not unionized. The union has not lived up to its earlier promises to bring these districts within the fold. So long as wages and prices were on an ascending scale, as from 1898 to 1920, the situation was not unbearable for the union fields. Time after time in that period the operators yielded to circumstances, anticipated the termination of contracts with the men, and raised wages to meet the increase in non-union fields. On a rising market where the competition was for labor, the operators in the organized districts were no sticklers for contract terms when the men asked for increases in advance of the date previously agreed upon.

With the tide receding, however, the miners refuse to reciprocate. Wages have gone down in every other industry. Wages at non-union coal mines have dropped to the 1917 level or lower, while those bound by the award of the President's Bituminous Coal Commission now face competition they cannot meet because the union will not consider a decrease in wages. With the grief of this year behind them and the prospect of more to come, including the possibility before wages can be adjusted, of a strike or strikes, during which the non-union fields will reap a harvest, it is small wonder many hold that the check-off has failed of its main purpose.

The check-off has had a baneful effect on the union itself. When demand exceeds supply in any market, salesmen become nothing but "order takers" and all incentive is lost for resourcefulness and initiative. Under a system that automatically keeps the membership of the miners' union at 100 per cent wherever it is recognized, the great incentive of holding the men is replaced by that of holding office. An organization the funds for which are supplied in abundance by the automatic, even forceful, extraction from pay envelopes

loses its punch. Self-perpetuating jobs do not produce the kind of leaders who built up the United Mine Workers. The present officers, particularly in the districts and locals, are not the type of citizen that a generation ago put the miners' union on the map nor are they the type to bring the organization back to its maximum usefulness.

More Reasons for Frankness About Coal Facts

WISCONSIN has investigated the coal situation and has found no fault with the local dealers. The report by P. H. Pressentin, a special investigator of the Wisconsin Department of Markets, concludes that "in so far as Wisconsin coal men are concerned, both wholesalers and retailers are not profiteering, but that they are themselves at the mercy of a situation over which they have no control."

As no coal is produced in Wisconsin the investigation covered only the relation between the distributor or wholesaler handling Eastern or Illinois coal in that territory and the retail dealers. Here some very interesting data are revealed. The average margin between cost to dealers and price delivered to consumer in five cities—Sheboygan, Ashland, Superior, Milwaukee and Racine—was found to be $2.49 per net ton of anthracite. The highest margin reported was $3.30 on pea size, in Milwaukee; the lowest was $1.95 on stove and nut sizes, in Racine. The highest average for all sizes was $2.60, in Milwaukee, doubtless because of so many small yards; the lowest average was $2.31, in Racine. Net profit in handling anthracite was found to be from 20c. to 45c. per ton, varying from the smaller figure with large companies to the larger figure for the smaller yards. The average is reported as 35c. per ton.

Retail margins on bituminous coal are reported to have ranged from $1.67 to $2.36 per ton on Illinois coal and from $2 to $2.50 on Eastern coal—that is, West Virginia splint, Pocahontas and Hocking. The conclusion of the investigator that the net profit per ton of from 25c. to 50c. on the small tonnage handled by many of the dealers is "insufficient to meet living costs today" is significant. The coal trade of Wisconsin is relieved of the charge of profiteering. The moral of the tale is found in the conclusion respecting the industry supplying the coal to the Wisconsin dealers. It was admitted that freight rates were too high and that the wages paid mine labor were high but fixed until April, 1922, by a Federal commission.

Having cleared the dealers in the state from any odium of evercharging for coal the report adds: "That the hard-coal industry is practically a monopoly controlled by coal-sales companies who are subsidiary organizations of large Eastern railroads. They fix the price at which the coal is to be sold all over the nation. Independent dealers are bound to accept the prices fixed or go without coal. The supply and price of coal in Wisconsin indicate a national condition which only control by the Federal government can reach. What profits coal-mine operators have made in the past and are making today cannot be learned by any investigation made in Wisconsin. If the mines were in Wisconsin it would be a different situation.

"There is substantial concentration in the anthracite-producing industry. Whether there has been any collusion by Eastern operators to keep down production, causing a shortage, in past years, is open for inquiry. It does not appear that such a condition exists the present year in so far as production goes. A sinister condition in the coal situation is the apparently monopolistic control the Eastern operators have of the whole business reaching from mine to retailer, as the larger dock companies (wholesalers) also conduct a retail business, making their interests so interlocked that it does not give an independent an opportunity, except upon such terms and conditions as the dock companies name. In other words, they must either pay the price that the dock companies fix, which price is primarily set by the price made by the Eastern operator, or go without coal."

The investigator deplores the fact that it is almost impossible to get "basic facts and figures relating to the fuel industry prior to the coal coming to the state."

Thus one large, influential, non-coal-producing state has put the burden of proof on the producer and distributor. The voters of this state find themselves powerless to get the facts about costs of production and distribution of coal; hence they are suspicious of combination and profits. Where they have been able to get the facts—that is, of local conditions—they are satisfied. The coal that flows through retailers' yards to households is more and more coming to be viewed as a public question; the business of supplying coal to voters is being looked upon as a public utility. We do not believe the industry has anything to hide, that the element that has in the past and that might now, if conditions permitted, take advantage of the consumer, is decidedly in the minority. For three years the activities of the producer and distributor have been investigated by the Senate with negative results as far as the public is concerned.

No violations of law by the coal industry were indicated, the defense against the onslaughts of opponents was successfully met, but the public is far from convinced that all is right even yet. It would seem that what is lacking is some means whereby an investigator, as in Wisconsin, can secure the "basic facts and figures relating to the fuel industry prior to the coal coming to the state." It must be apparent to all that the result of this particular investigation and report is to increase the pressure on the congressional delegation from Wisconsin to provide, through Federal legislation, that type of data. Surely the point has been passed where the producer and distributor may sit back and say that what he charges for coal is none of the business of the consumer, or that he may expect the buyer to be content with his assertion that he is making but a reasonable profit, or even losing money.

It is no simple matter to set forth the facts in a form to appeal to the man who shovels his coal into his furnace. But before even that can be attempted, the coal producers and distributors must get past the point of agreeing that fact finding is a good thing and desirable, and must find some way to make it an accomplished fact. A producer of coal may appeal to the business judgment of his large customers, the industrials, railroads or public utilities, and satisfy them as to the reasonableness of his position, but another method of approach to the household consumer must be adopted. None so far considered excels the possibilities of approach through the newspaper with a story based on facts ascertained by or through the government. The public that controls Congress wants the facts and will eventually get them. It would seem better to offer the data than to have them extracted by force.

Mixed-Pressure Turbine Installation with Regenerator Appreciably Decreases Power Costs at Nokomis

Exhaust from Mine Hoist Passed Through Rateau Regenerator and Mixed-Pressure Turbine Greatly Lowers Power Cost—Service More Continuous Than That Obtained from Purchased Power

By C. W. Smith,*
Chicago, Ill.

THE Nokomis Coal Co. recently put into operation at its Nokomis mine, in Illinois, one of the most modern coal-mine power plants in the state. This plant is of 1,300-kw. capacity, being equipped with a 1,000-kw. mixed-pressure and a 300-kw. high-pressure turbine. Prior to the installation of this plant all electric power used was purchased from a local public-service company. The hoist, which was driven by two 28 x 48-in. steam engines, together with an 18 x 18-in. fan engine and several pumps, was supplied by steam from six 84 in. x 20 ft. horizontal return-tubular boilers.

Power was purchased for general lighting and for driving, the tipple machinery and also for all underground operations. The day load in addition to the tipple machinery consisted of thirty alternating-current cutting machines each equipped with a 30-hp. squirrel-cage motor, also two synchronous motor-generator sets—one of 150- and the other of 200-kw. capacity—operating the main-line haulage motors. The night load consisted of two 110-kw. motor-generator sets used for charging the seventeen storage-battery gathering locomotives and the night illumination above and below ground. The maximum demand during a five-minute interval was between 450 and 500 kw., and the momentary demand often ran up to 700 kw.

Particularly Expensive in Slack Periods

Although the electrical installation at this mine was planned to be as economical as possible, the method of both purchasing and generating power made the plant as a whole extremely expensive to operate†. This was especially true during periods of slack work when it was necessary to keep firemen on duty and to pay high primary or service charges to the power company. The lack of economy became more pronounced during the last two years, when the power company's rates were almost doubled. Another objection to this type of power installation in addition to the expense of operation was the numerous and expensive shutdowns caused by frequent failure of the utility company to deliver current. These shutdowns often occurred at a time when continuous operation of the mine was highly desirable.

Accordingly the power situation at this mine was studied carefully to ascertain what changes could be made to effect the desired economies. There were found to be three schemes worthy of trial: (1) To discard the steam hoist and replace it with an electric machine, purchasing all power. (2) To install additional boilers and a high-pressure power plant generating all power. (3) To install a mixed-pressure turbine, thus utilizing the waste steam from the hoist engines, adding boilers to supply any additional steam that might be required.

These three schemes were studied with care and it was decided that the third was the most desirable. A mixed-pressure plant appeared to be the least expensive in first cost and if successfully installed it would be the most economical to operate. After consultations with numerous manufacturers and engineers, C. M. Garland, consulting engineer, of Chicago, was engaged to make a report on the power situation as it then existed and to make recommendations as to the installation best adapted to the situation.

Mr. Garland, after careful investigation, reported that a mixed-pressure installation was entirely feasible and

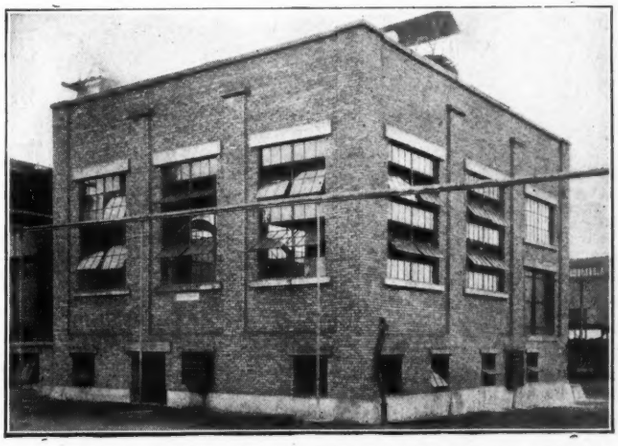

FIG. 1. EXTERIOR OF TURBINE ROOM WITH REGENERATOR HOUSE AT EXTREME LEFT

The power house is constructed of common brick laid with red mortar and trimmed with reinforced-concrete coping, lintels and sills. It is large and roomy and has a pleasing appearance. Large windows, fitted with steel sash, provide plenty of light and ventilation.

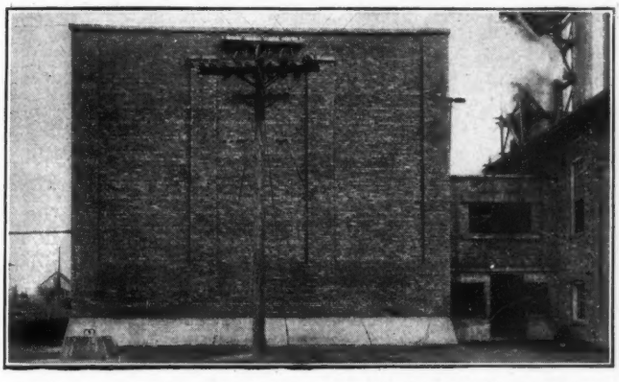

FIG. 2. TIPPLE SIDE OF TURBINE BUILDING WITH REGENERATOR ROOM ON RIGHT

The turbine-room floor was built level with the floor of the hoist-engine room and is connected thereto by a covered passage above the regenerator room. As the building is located near the mine tipple it was feared that coal dust might cause trouble in operating the turbine. To overcome this no windows were put in the side nearest the tipple. The switchboard was mounted along this blank wall.

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†A general description of this electrical installation appeared in *Coal Age* of Oct. 16, 1919.

that in his opinion it could be operated without additional boilers. Accordingly he was commissioned to make the plans for and to supervise the erection of the new turbine plant. Construction was begun in July, 1920, but because of the difficulty experienced in obtaining material and machinery at that time the plant was not actually put into operation until June, 1921.

In order to conserve all steam possible it was decided to electrify all machinery on the surface, with the exception of three car-puller engines. In this way not only was all the steam actually conserved but also the condensation in the various steam lines. In accordance with this plan the repair shop, ventilating fan and water-supply pumps were electrified. As the maximum demand was between 450 and 500 kw. before these changes were made, it was decided to make the main unit in the new installation of 1,000-kw. capacity.

This would be a satisfactory size for economical operation and would provide enough surplus power to take care of any future increase in the mine consumption. This unit was to be a mixed-pressure turbine in order to utilize the waste steam from the hoist engine. To handle the night load it was decided to install a 300-kw. high-pressure turbine. It was planned to run the 1,000-kw. unit sixteen hours each day and the 300-kw. machine eight hours. In case of necessity, however, the 300-kw. machine can carry the load for the sixteen hours the mine is not hoisting. Even in event of an accident to the 1,000-kw. unit, the storage-battery locomotives can be used on the main-line haulage and maintain mine production at about 50 per cent of normal capacity.

As shown in Figs. 1 and 2, the power plant is housed in a new brick structure about 41 x 51 ft. in size, constructed adjacent to the hoist-engine room. The building is 37 ft. 6 in. high above the floor of the basement. The distance from the basement floor to the top of the turbine-room floor is 12 ft., giving ample space for the condensers and auxiliaries. The new building proper was set about 13 ft. away from the hoist-engine room and this space was used to house the Rateau regenerator. The exterior of this regenerator room may be seen in Figs. 1 and 2.

This arrangement places the regenerator in a direct line between the hoist engine and the mixed pressure turbine and provides a housing at small expense for protecting the regenerator from the weather. In addition to this, doors are provided in the dividing wall between the basement of the turbine room and the regenerator room so that the heat given off by the regenerator is utilized in winter for heating the turbine room.

The 1,000-kw. mixed-pressure turbine was built by the Ridgway Dynamo & Engine Co. and was designed to carry the rated load on either high-pressure steam at 150-lb. gage with 28-in. vacuum or on low pressure steam at 18-lb. absolute and 28 in. of vacuum. The generator was designed for 2,300-volt 3-phase, 60-cycle current and provided with direct-connected exciter.

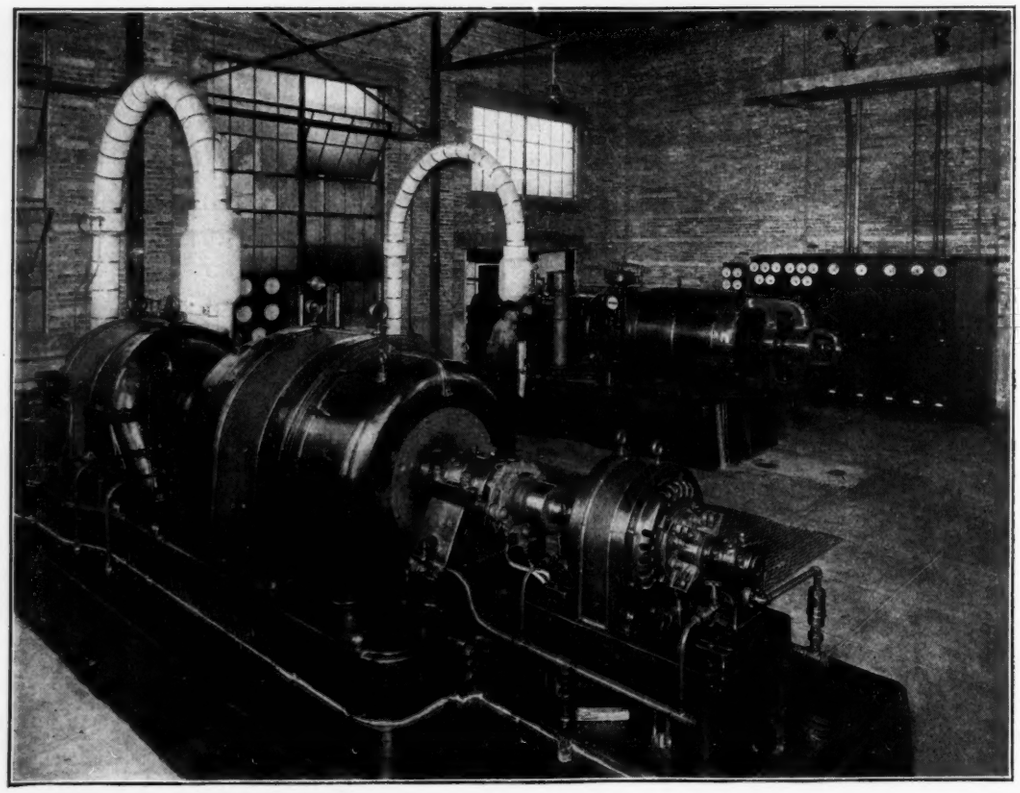


FIG. 3.

Turbine-Room Interior with Switchboard

The 1000-kw. mixed-pressure turbine is shown in the foreground, and behind it is the 300-kw. high-pressure turbine. The turbine room is roomy and well lighted. Behind the 300-kw. machine is the passage to the hoist-engine room.

This unit is mounted over a Worthington surface condenser with turbine-driven circulating pump, motor-driven condensate pump and steam-driven rotative dry-vacuum pump. The condenser was designed to provide a 28-in. vacuum with 70 deg. cooling water.

Live steam for the 1,000-kw. unit and its auxiliaries is taken from an 8-in. high-pressure header located in the basement of the turbine room. This header also supplies steam for the 300-kw. unit. Fig. 3 shows the turbine room and Fig. 4 the condenser and auxiliaries.

The exhaust steam as it comes from the hoist engine passes through an 18-in. header to the Rateau regenerator. This is 9 ft. in diameter and 25 ft. long and is equipped with back-pressure valves set at 3 lb., which is the maximum back pressure on the hoist engine. From the regenerator the exhaust steam passes to the low-

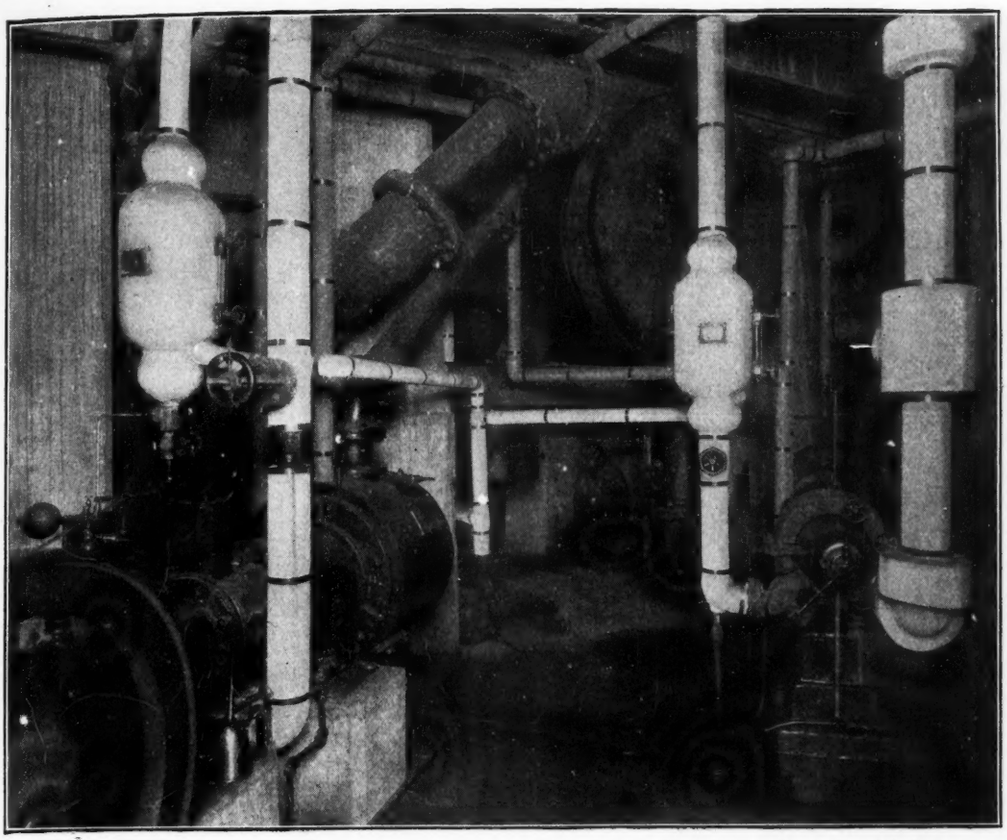


FIG. 4.

Condenser and Auxiliaries for 1,000-kw. Turbine

This unit is mounted over a Worthington surface condenser with turbine-driven circulating pump, motor-driven condensate pump, and steam-driven rotative dry vacuum pump. The condenser was designed to provide a 28-in. vacuum with 70 deg. cooling water.

pressure side of the Ridgway turbine through an 18-in. line and an oil separator. When the pressure in the regenerator falls to about 1½ lb. per square inch below the atmospheric pressure, the governor on the mixed-pressure turbine automatically admits enough live steam to carry the load until the pressure in the regenerator is again sufficient to carry the load alone. This governor has been found to operate in a highly satisfactory manner.

Steam from the auxiliaries used in connection with this unit is exhausted into the 18-in. low-pressure line leading from the regenerator. Two 4-in. pop valves placed on the 8-in. high-pressure header also are connected so as to blow off into the 18-in. low-pressure header. These are set to pop off at a pressure slightly below that which lifts the safety valves on the boilers, thus saving the steam that usually is lost when the pressure in the boilers exceeds that desired.

Circulating water from the condenser is pumped through a spray cooling system by a 12-in. steam turbine-driven centrifugal pump. This spray system was installed over an existing pond holding the reserve water supply. This reservoir is 300 ft. long by 50 ft. wide and is located at a distance of about 150 ft. from the plant.

FIG. 5.

Turbine Building and Spray Pond

Circulating water from the condenser is pumped through a spray cooling system which is installed over a 50 x 300 ft. pond holding the reserve water supply located 150 ft. from the plant. The circulating water from the Schutte-Koerting condenser is not passed through the spray nozzles, as it would require an additional circulating pump. This water is allowed to circulate from one end of the pond to the other.

Fig. 5 shows a general view of the Nokomis power plant.

The 300 kw. high-pressure turbine, furnished by the General Electric Co., is equipped with a Schutte-Koerting jet condenser to which circulating water is supplied by a 6-in. motor-driven centrifugal pump. This is returned to the cooling pond by gravity.

The circulating water from the Schutte-Koerting condenser is not passed through the spray nozzles, as this would require an additional circulating pump. It is allowed to circulate from the discharge near one end of the pond to the suction line at the opposite end. During the normal operation for which this unit was intended this arrangement is entirely satisfactory. Even in the summer months the temperature of the pond rises only a few degrees. When this unit has to be operated for more than sixteen hours a day, as sometimes happens, when the mine is not working, the circulating pump on the large condenser is operated once or twice a day for a period of approximately an hour in order to cool down the temperature of the pond. This has proven a highly satisfactory manner of eliminating an additional circulating pump and of saving the power required for its operation.

The switchboard, which was constructed by the Westinghouse Electric & Manufacturing Co., is of remote-control type with all the 2,300-volt equipment located in the basement. It is provided with a voltage regulator and synchronizers for the paralleling of the two generators. The 1,000-kw. machine is protected by circuit breakers on the feeder panels and the 300-kw. generator is protected by an overload attachment on the generator switch. This arrangement is made necessary by the fact that at night the small generator must supply current over the feeders which are ordinarily supplied during the working period by the 1,000-kw. machine. Two generator panels, a feeder panel for the bottom, one for the mine fan, one for the tipple, and one for station auxiliaries are provided. A lighting panel is installed for the distribution of the current to the lighting circuits on the surface as well as a swinging bracket for the voltage regulator and station instruments.

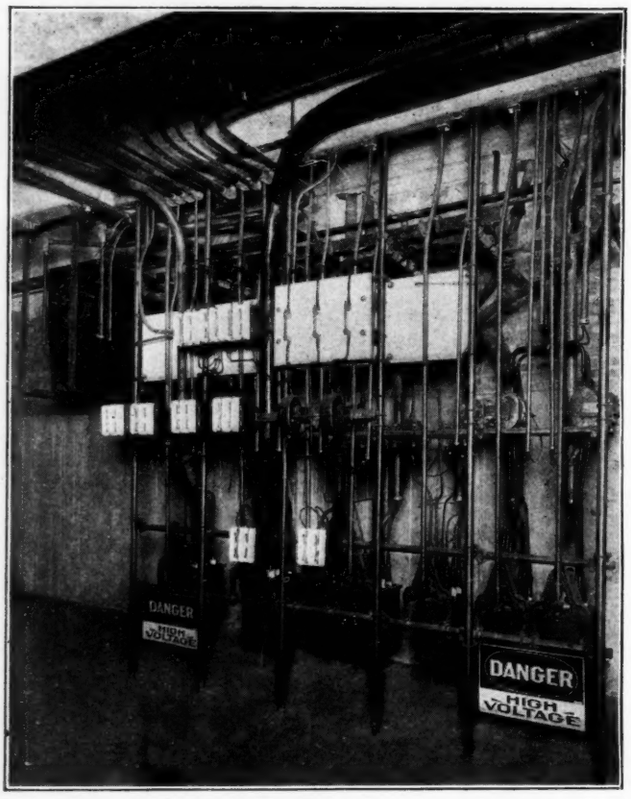


FIG. 6. HIGH VOLTAGE SWITCHBOARD EQUIPMENT IN TURBINE ROOM BASEMENT

The switchboard, which was constructed by the Westinghouse Electric & Manufacturing Co., is one of the remote-control type with all 2,300 volt equipment located in the basement.

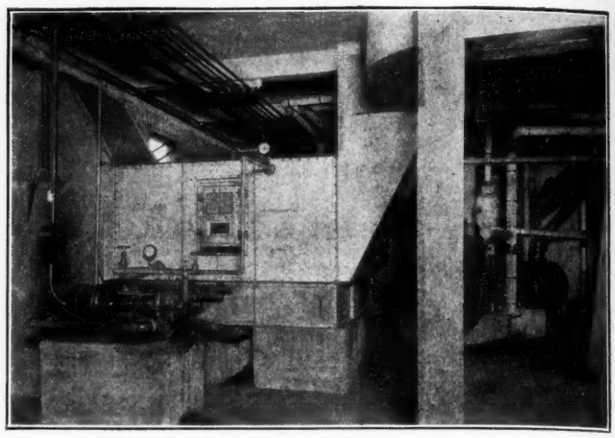


FIG. 7. MOTOR-DRIVEN AIR WASHER

As the turbine building is located near the mine tipple it was feared that the coal dust might cause trouble in operating the turbines. An air washer was provided for washing all air used in ventilating and cooling the turbines.

Both generator and feeder panels are equipped with integrating wattmeters for measuring the current supplied to the different departments. A flow meter is provided for measuring the amount of high-pressure steam supplied to the turbine plant. Fig. 6 shows the high-tension equipment located in the basement.

The power house is constructed of common brick laid in red mortar and trimmed with reinforced-concrete coping, lintels and sills. It is large, roomy and of pleasing appearance. Large windows, fitted with steel sash provide plenty of light and ventilation. The floor of the turbine room was built level with that of the hoist engine room and is connected thereto by a covered passage above the regenerator room shown in Fig. 2. As the building is located near the mine tipple it was feared that coal dust might cause trouble in operating the turbine. To reduce this possibility no windows were put on that side. The switchboard was mounted along this blank wall. An air washer was provided for washing all air used in ventilating and cooling the generators. Fig. 7 shows the air washer and pump.

Power for the mine is taken direct from the 3-phase 60-cycle 2,300-volt bus. Transformers reduce the voltage to 270 for operating the tipple machinery, shop motor, pumps and mining machines, but the ventilating-fan motor and motor-generator sets are operated directly from the 2,300-volt line.

The new plant was placed in operation about July 1 and was run for about two weeks before the supply of power from the public service company was disconnected. Notwithstanding the special nature of the design, the plant was placed in operation with practically none of the troubles ordinarily encountered at this particular period in the life of every plant. Since that time it has been carrying the load without difficulty and without interruption to service. The most gratifying circumstance has been the performance of the mixed-pressure turbine in shifting from high-pressure to low-pressure steam under variable loads. It can be truth-

fully said that the operation of the mixed-pressure turbine on variable loads and on passing from high-to low-pressure steam and the reverse is just as steady as that of a high-pressure machine operating on similar loads.

This matter of regulation in shifting from high-pressure to low-pressure and the reverse under variable loads has been the weakest feature in the design of mixed-pressure installations. The elimination of this weakness in this machine greatly broadened the field for the mixed-pressure turbine for mining and similar operations involving the utilization of an intermittent supply of low-pressure steam.

It has been found also that the regenerator, instead of increasing the back pressure on the hoisting engines, has caused it to be reduced, for the original exhaust lines were too small. This, together with the electrification of the fan drive and the pumps, has had the effect of lowering the steam consumption, and the six original boilers now operate the entire plant with greater ease than they did before the installation of the turbines. It is estimated that the reduced steam consumption will save 3,000 tons of coal per annum.

Power Generation Adds Only Two On Roll

Only two men have had to be added to the force since this plant was put into operation. On account of the large tonnage handled it has been customary for many years to employ two hoisting engineers. These men relieve each other every hour. Formerly the engineer off duty looked after the oiling of engines, pumps and other machinery, but since the turbines were installed he has acted as power-plant attendant. This has necessitated the employment of an oiler. It also has been necessary to place a fireman on the third shift to relieve the hoisting engineer employed on this shift, who formerly did his own firing. In addition it has been necessary on operating days to have an engineer put in an extra hour in the morning, as his help is needed in starting up the mixed-pressure turbine.

This plant has effected a large reduction in the cost of power for the Nokomis Coal Co. and undoubtedly will cause radical changes in the design of plants serving relatively deep mines where large production is desired. Although the steam hoist has been recognized as much more flexible and less expensive than an electric installation, yet it has been considered wasteful to operate. This waste, however, can be entirely overcome by the installation of a mixed-pressure power plant. Furthermore at a deep-shaft mine with a short hoisting cycle, a steam hoist with a mixed-pressure turbine installation will give virtually the same efficiency in the use of steam as will a high-pressure turbine installation with motor-generator sets and an electric hoist.

Analyses of Southern Somerset County Coal

SOMERSET County, Pennsylvania, was explored by the second geological survey of that state, when only six commercial mines were working outside of the Salisbury basin, and so there were few data available on which the study could be based. For this reason J. D. Sisler, of the Bureau of Topographic and Geological Survey, with G. H. Ashley, State Geologist, is making an inquiry and has published in typewritten form an account of his preliminary findings.

In the southern part of Somerset County are found the Brookville bed, with an average thickness of 36 in., many binders and much sulphur; the Clarion bed, about 18 in. thick, with many fine shale binders and rather high in sulphur; the Lower Kittanning bed, 28 in. in average thickness, clean but with high sulphur; the Middle Kittanning, which is merely of geological interest but which is not mineable; the Upper Kittanning, the average thickness of which is 4 to 5 ft. where mined, which is never entirely clean or easy to rid of its impurities and is in places rather high in ash and sulphur; the Lower Freeport, which has a maximum thickness of 5 ft. 4 in. including impurities and which has a large shale and bone binder in the center; the Upper Freeport, which is of equal thickness but always has shale and bony binders; the Bakerstown, if that is really what it is, which is 2 ft. thick and clean; the Pittsburgh, which is confined to the Berlin-Salisbury basin and is 7 ft. 9 in. thick including binders that are here larger than in ordinary Pittsburgh coal; the Redstone, which is confined to the same basin and which averages 4 ft. 8 in. and is fairly clean with two small characteristic binders.

This region has three basins: The Wellersburg, which is the tailing out of the Georges Creek basin of Maryland; the Salisbury-Berlin basin with large areas in the troughs of lightly covered Pittsburgh and Redstone coals and the Somerset-Confluence basin, which contains only the Allegheny series of coals from the Clarion to the Upper Freeport. Although the Wellersburg area is a fringe of the Georges Creek basin of Maryland, yet, because of the overshadowing value of the latter region, the Wellersburg field has a small production and has never been fully prospected.

ANALYSES OF COAL IN THE MINES OF THE SOUTHERN HALF OF SOMERSET COUNTY, PENNSYLVANIA

Name of Company	Name of Mine	Location	Coal Bed	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulphur	B.t.u.
Berlin-Salisbury Basin									
Meyersdale Fuel Co	Meyersdale No. 3	6 mi. S. of Meyersdale	Redstone	3.43	20.41	62.54	13.62	1.98	12,774
Consolidation Coal Co	Consolidation No. 105	2½ mi. S.W. of Meyersdale	Redstone	2.54	21.71	63.55	12.20	0.74	13,184
E. Stattler & Son	Stattler	¼ mi. N.W. of Meyersdale	Redstone	5.97	19.56	64.31	10.16	0.96	12,580
Boynton Coal Co	Chapman No. 3	¾ mi. W. of Salisbury	Pittsburgh	3.15	21.55	69.55	5.75	0.90	14,208
	Merchants No. 3	1½ mi. N.E. of Salisbury	Pittsburgh	3.00	19.60	70.30	7.00	0.70	14,175
Meyersdale Fuel Co	Myersdale Fuel No. 3	6 mi. So. of Meyersdale	Pittsburgh	3.59	22.69	68.12	5.60	1.14	14,108
Consolidation Coal Co	Consolidation No. 104	2½ mi. S.W. of Meyersdale	Pittsburgh	3.14	20.35	67.36	9.15	1.09	13,692
E. Stattler & Son	Stattler	¼ mi. N.W. of Meyersdale	Pittsburgh	3.24	21.80	65.23	9.73	1.46	13,551
	Consolidation No. 112	2 mi. S.W. of Berlin	Little Pittsburgh	2.60	21.50	68.00	7.90	1.70	13,903
Black Coal Co		3 mi. N.W. of Meyersdale	Upper Freeport	3.82	19.09	68.66	8.43	2.38	13,698
	Coronet No. 3	1½ mi. E. of Berlin	Upper Freeport	1.40	18.60	68.40	11.60	1.90	13,604
McAllen Coal Co		1½ mi. N. of Garrett	Lower Freeport	2.28	18.99	68.30	10.43	1.20	13,549
	Eagle	2½ mi. E. of Salisbury	Lower Freeport	3.50	18.20	69.70	8.60	1.50	13,667
	John Wills No. 2	1½ mi. N.E. of Berlin	Upper Kittanning	3.20	19.90	66.60	10.30	1.70	13,509
	John Wills No. 3	1½ mi. E. of Berlin	Upper Kittanning	3.40	20.60	66.50	9.50	1.30	13,619
	Pen Mar No. 2	1½ mi. S.W. of MacDonaldton	Lower Kittanning	1.10	15.40	73.50	10.00	0.90	13,627
	Pen Mar No. 3	MacDonaldton	Lower Kittanning	1.00	16.00	72.60	10.40	2.20	13,758
Atlantic Coal Co	Atlantic Coal Co. No. 1	5 mi. N.W. of Garrett	Brookville	8.76	17.40	66.11	7.73	0.66	12,799
Somerset-Confluence Basin									
Quemahoning Co	Quemahoning No. 10	½ mi. W. of Rockwood	Upper Freeport	2.93	20.04	66.01	11.02	2.05	13,340
Ursina Fuel Co	Mill	¼ mi. E. of Ursina	Upper Freeport	2.61	24.24	59.96	13.19	1.18	13,056
	Linmer	4½ mi. S.E. of Confluence	Upper Kittanning	2.80	25.90	63.10	8.20	2.40	13,867
MacGregor Coal Co	MacGregor Coal Co. No. 1	4 mi. N. of Rockwood	Lower Kittanning	2.5	19.94	68.70	8.85	2.23	13,747
J. M. Murdock & Bros		6 mi. N. of Rockwood	Lower Kittanning	2.08	21.30	64.15	12.47	2.95	13,182
M. A. Snyder Coal Co		¼ mi. E. of Markleton	Lower Kittanning	3.15	20.86	62.20	13.79	2.88	12,803

Advantage of Using an Isometric Mine Map Bearing Selected Operating Date

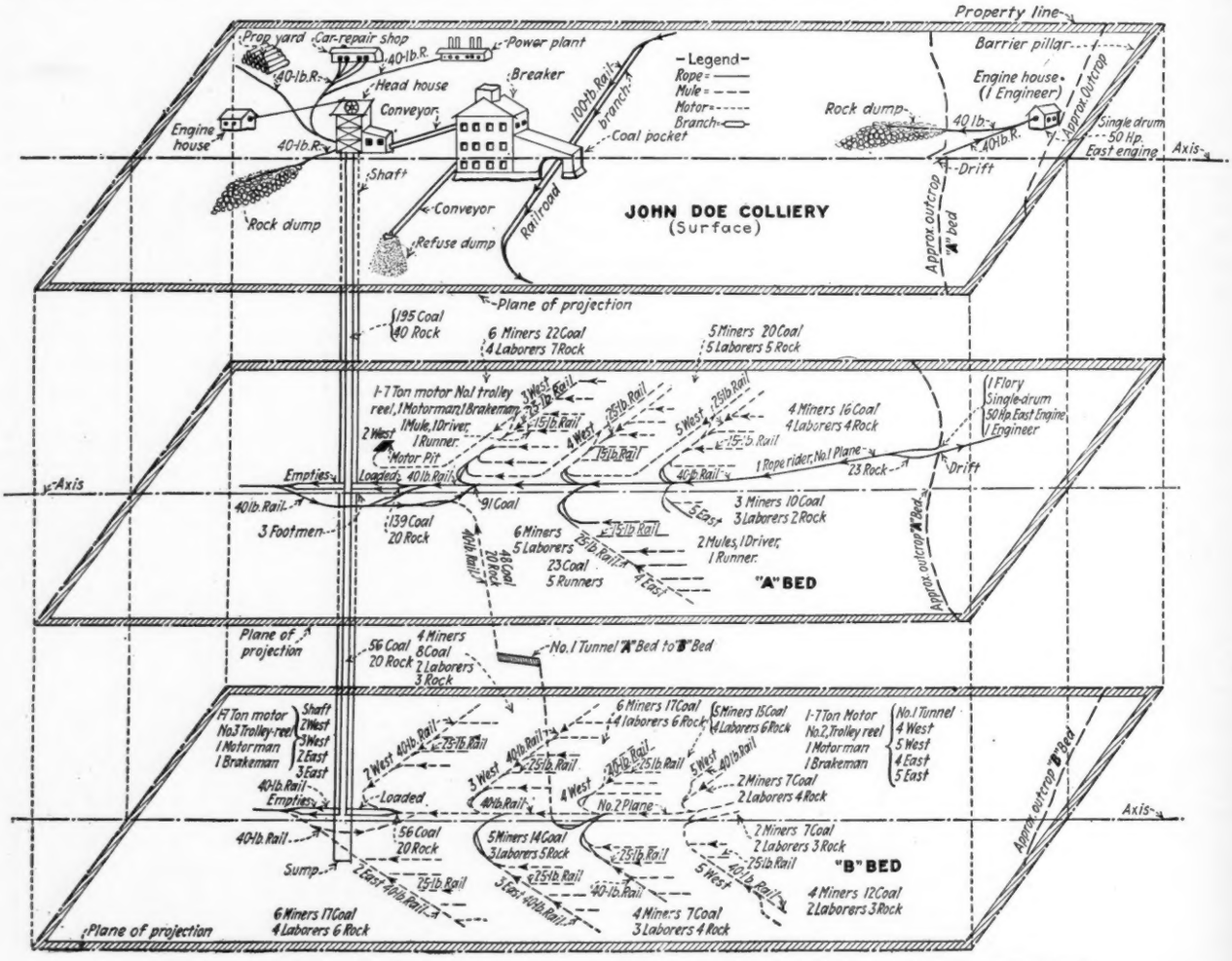
By Thomas F. Kennedy
Scranton, Pa.

ALL the problems around the mines, whether they relate to transportation, ventilation, drainage, power distribution or power utilization, have reached such a high degree of complexity that their solution is now more difficult than ever, especially where conditions make it hard even for superintendents and engineers to visualize accurately the relative locations under and above ground. In the early stages of development of any coal property, it is an easy matter for the average superintendent, foreman or engineer to remember the number of miners and laborers employed at any particular point, the number of cars of coal and rock produced, the location of the various working chambers, the kind of haulage and the like. As development progresses, however, it is almost impossible for the superintendent or engineer in charge to keep in mind the varied and many additional factors all of which contribute to an increased output.

As an aid to the solution of the foregoing problems pictures of the working maps can be made by reducing the scale to one of, say, 1 in. equals 400 ft., and delineating upon these reduced maps of the surface and underground workings the various factors relating to transportation, power, drainage, ventilation and the like.

To illustrate the procedure to be followed I have selected a typical example involving transportation. In Fig. 1 an outline of a colliery is shown presenting its general and important surface features so far as transportation is concerned. Figs. 2 and 3 show the "A" and "B" beds with the various working gangways and chambers, the number of miners and laborers employed, the various weights of rail used in the track system, etc. Where only a few beds are considered, it is easy to visualize the whole transportation system in general by studying the plans, but when the number of measures worked is large and the transportation is complicated, it is almost impossible to develop a picture of the system without frequent reference to many maps. This means the expenditure of much time and energy. Consequently, in order to save trouble, I have resorted to the development of a distorted isometric view of the several coal beds. This is shown below. The transportation systems in each bed are drawn or projected upon the plane of projection of the colliery property. The view of No. 1 Tunnel connecting the "A" and "B" beds is shown distorted.

By this means transportation from the face to the


Property line
Prep yard
Car-repair shop
Power plant
40-lb.R.
Head house
Breaker
Conveyor
100-lb. Rail branch
Coal pocket
Engine house
Shaft
Rock dump
Refuse dump
Railroad
JOHN DOE COLLIERY
(Surface)
Legend
Rope
Mule
Motor
Branch
Barrier pillar
Engine house (1 Engineer)
Approx. outcrop
Single drum 50 Hp. East engine
Axis
Drift
Approx. outcrop "A" bed
Plane of projection
195 Coal 40 Rock
6 Miners 22 Coal 4 Laborers 7 Rock
5 Miners 20 Coal 5 Laborers 5 Rock
1-7 Ton motor No.1 trolley reel, 1 Motorman, 1 Brakeman
1 Mule, 1 Driver, 1 Runner
Motor Pit
Loaded
Empties
25-lb. Rail
15-lb. Rail
4 Miners 16 Coal 4 Laborers 4 Rock
1 Flory Single-drum 50 Hp. East Engine 1 Engineer
1 Rope rider, No.1 Plane
23 Rock
3 Footmen
139 Coal 20 Rock
91 Coal
6 Miners 5 Laborers 23 Coal 5 Runners
3 Miners 10 Coal 3 Laborers 2 Rock
2 Mules, 1 Driver, 1 Runner
"A" BED
56 Coal 20 Rock
4 Miners 8 Coal 2 Laborers 3 Rock
No. 1 Tunnel "A" Bed to "B" Bed
11-Ton motor No.3 Trolley reel 1 Motorman 1 Brakeman
Shaft 2 West 3 West 2 East 3 East
6 Miners 17 Coal 4 Laborers 6 Rock
5 Miners 15 Coal 4 Laborers 6 Rock
1-7 Ton Motor No.2 Trolley reel 1 Motorman 1 Brakeman
No.1 Tunnel 4 West 5 West 4 East 5 East
No.2 Plane
2 Miners 7 Coal 2 Laborers 4 Rock
5 Miners 14 Coal 3 Laborers 5 Rock
2 Miners 7 Coal 2 Laborers 3 Rock
"B" BED
4 Miners 12 Coal 2 Laborers 3 Rock
Sump
6 Miners 17 Coal 4 Laborers 6 Rock
4 Miners 7 Coal 3 Laborers 4 Rock
Approx. outcrop "B" Bed

STEREOGRAM OF A COAL-MINING PROPERTY WITH HEADINGS AND ROOMS IN SKELETON

By this type of map the various operations are placed in due relation to each other, though somewhat distorted by isometric projection. Somewhat the same effect is attained by the subsequent arrangement, however, though the relation is not so clear to one who is not a mining man. The use of the skeleton saves labor in reproduction and, what is more important, makes it possible to compress the working detail into less space. This is important, as half the value of information lies in its conciseness.

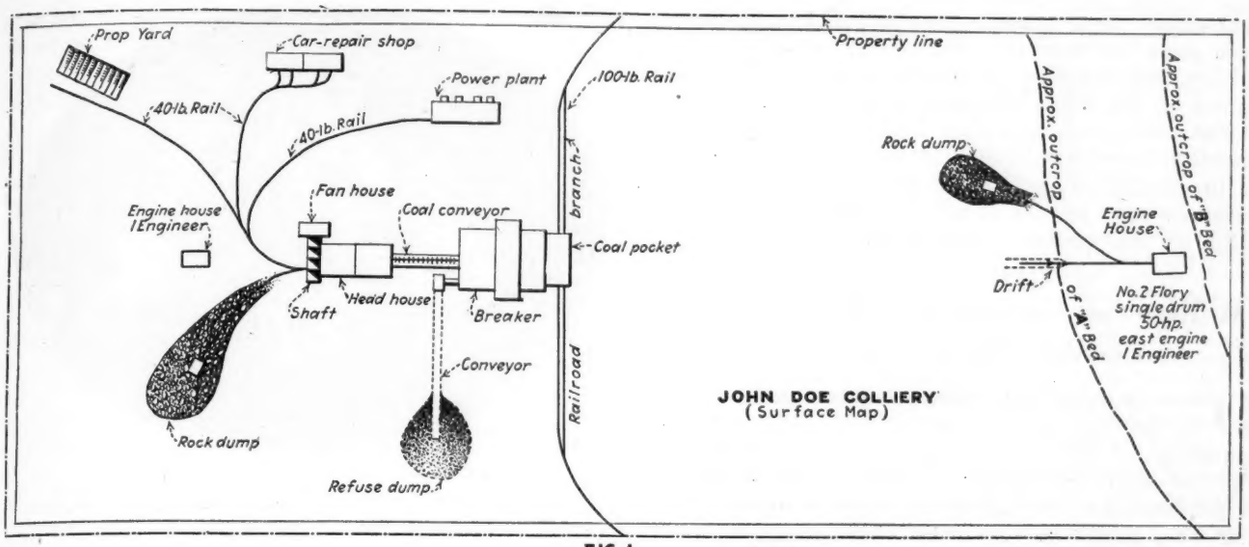


FIG. 1

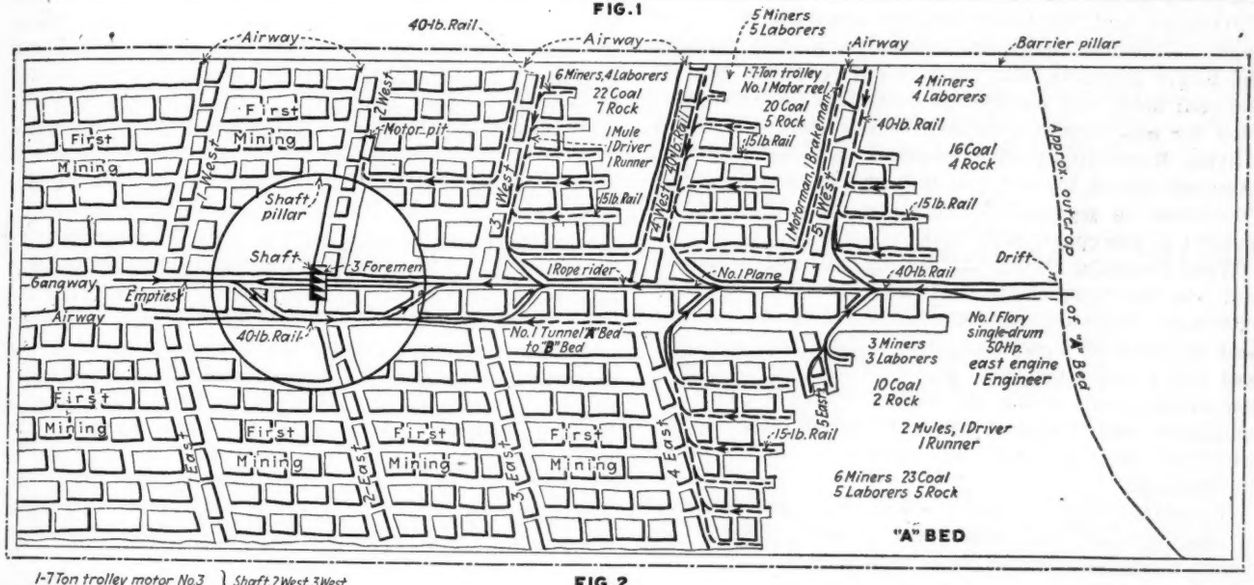


FIG. 2

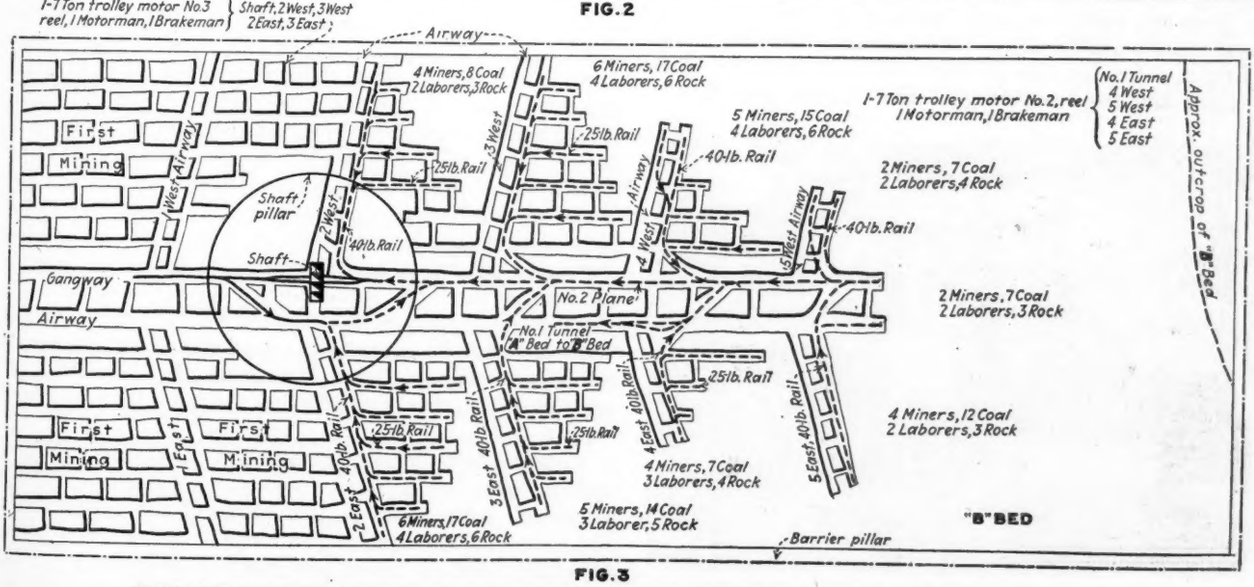


FIG. 3

MAPS OF SAME PROPERTY AT DIFFERENT LEVELS, SHOWING CERTAIN OPERATING DATA

It is becoming apparent that the payroll record which deals with the whole mining force and frequently fails to group the employees of like occupation affords but poor indication of operating conditions. Too many mines have no other record. Others, like the Hudson Coal Co., are using variicolored pins disposed on a wall chart. Some of these maps were exhibited at the Marvine Colliery on the occasion of inspection by the members of the American Institute of Mining Engineers during their recent trip to the anthracite region. This method of annotation, while objectionable because corrected only at much labor, gives the information effectively at the time for which the map is made and is intelligible even to the novice.

coal pocket can be traced with small effort. A study of both plans and isometric views furnishes all important information necessary for a quick and accurate visualization of the whole transportation system.

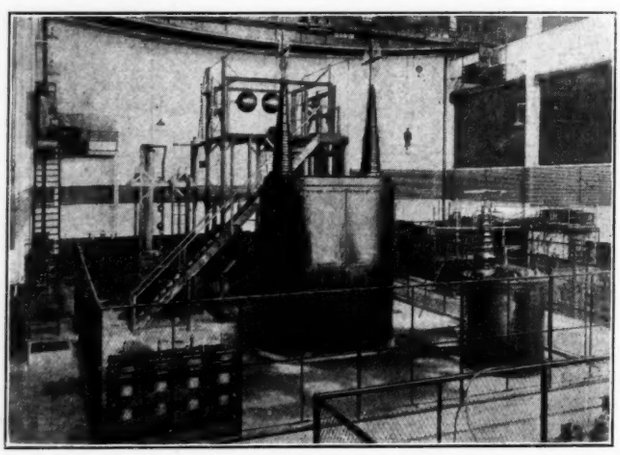
The same principle, namely, that of drawing distorted isometric views, can be applied also and with advantage to the ventilation, power and drainage systems. Such drawings may become a valuable aid in reports compiled for coal operators and laymen.

Million-Volt Current Tests Point to Mines As Possible Electrification Centers

ONLY by using high voltages can coal mines hope to be the sites of power-generating stations for the industries of the United States. One peculiarity of our one-sided development is that regions where coal is produced are not the great manufacturing centers that they might be reasonably expected to be, unless Pittsburgh and St. Louis may be regarded as exceptions. The first, however, in the main manufactures the larger products, and St. Louis is over the edge of the coal fields and derives its importance from having been for many years a railroad center, and still earlier a lively Mississippi port. Generally speaking, factories have not moved toward coal but coal toward factories. Population is segregated along the Atlantic seaboard and not in the coal-mining states.

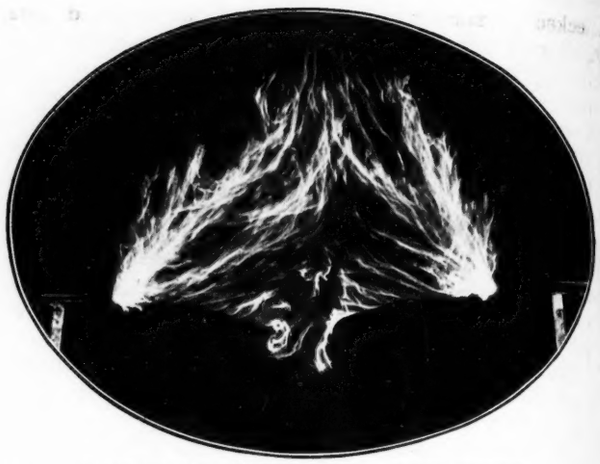
West Virginia, one of the greatest of coal producers and one where much of the best coal is produced, is extremely backward in manufacture, and other areas, such as parts of Virginia and Kentucky, have excellent coal and great activity as coal centers, yet they make few of the goods which the United States needs. The population also is sparse, partly by reason of inaccessibility and also because of the history of our industrial development.

It seems, therefore, that the railroads must continue to transport our coal with great economic loss or else means must be provided such as will make it possible to transmit electricity over greater distances. Owing to the facts stated and to the necessity for the transshipment of other raw products than coal into the mine regions and the freighting of the finished products to



APPARATUS FOR GENERATING AND TESTING MILLION-VOLT CURRENT

The highest commercial voltage is 220,000, this now being installed on the Pacific coast. Difficulties arise with excessively high voltage owing to the higher costs of insulation, pole construction and heavy conductors. The conductors for a million volts would have to be 4 in. in diameter or larger.



A 105-IN. SPARKOVER AT 1,100,000 VOLTS

The air is a poor dielectric for high voltages. Note the long travel through air made by lightning discharges, which are sparkovers of titanic dimensions. This spark is nearly 9 ft. long.

the districts which the large populations now occupy we cannot expect in this generation to fill the mining regions with a manufacturing population, for which indeed the rugged character of the country and the water-supply difficulties of all mining areas render them in a large degree unsuited.

It has been said that the voltage should be 1,000 per mile of transmission. A thousand-mile transmission should therefore be at a million volts. Can electricity be conducted with safety and certainty at such a voltage? All experiments in this direction are of vital interest to those who would use the coal mines as power-generating centers. The great super-power project does not contemplate any such distances as one thousand miles. It looks to the nearer coal fields and regards them as feeders in the main for those parts of the manufacturing East as are nearest to the coal fields. Though the power would be interconnected it is not supposed that Clearfield, much less West Virginia, would supply power for Boston and the other manufacturing centers of New England.

Though there are many economic difficulties in the effective use of large voltages and though many engineers question whether current created at the mines can compete with current made from coal at the point of sale and doubt whether it is economically possible to condense with the water at the mines the large quantities of steam used in a super-power station, yet it is of interest to coal-mining men that successful manipulation of electric power at more than one million volts and at commercial frequencies has been accomplished in the high-voltage engineering laboratory at the Pittsfield works of the General Electric Co. During the course of the experiments just completed much valuable data was gathered indicating the feasibility of appreciably higher transmission voltages than are now in use.

Physical laws usually accepted as applying to high-voltage phenomena were found to hold true at these enormous potentials. In the course of the experiments the spacings for sphere- and needle-spark gaps were carefully checked up and prolongation of existing curves (750,000 volts and under) were found correct up to 1,000,000 volts.

Arc-over tests also were made on strings of standard 10-in. suspension insulators at potentials up to 1,100,000 volts. The accepted laws of corona were

checked at similar potentials and found to hold true. A short transmission line was tested for corona conditions and the results indicated that a line using conductors 4 in. in diameter or larger would be necessary at 1,000,000 volts.

The successful conclusion of these tests is the result of more than thirty years of constant experimentation, during which time transmission voltages have risen steadily from the first 15,000-volt line built in Pittsfield in 1891 to the present high commercial potential of 220,000 volts, equipment for which was recently shipped from Pittsfield and is now being installed on the Pacific coast.

These tests confirm the belief of the Pittsfield engineers that it will be commercially feasible to use appreciably higher voltages than are now employed in the transmission of power and betoken the extension of long-distance transmission beyond limits heretofore believed possible. Electrical engineers are now in a position to forecast results.

The significance of these tests is well stated by F. W. Peek, Jr., director of the laboratory, as follows:

For some time engineers have been able to predict with certainty the corona and spark-over characteristics of high-voltage transmission. These predictions were based on laws of corona established by careful tests made up to about 250 kv. and on spark-over curves established on needle and sphere gaps as well as on line insulators at somewhat more than double this potential. Commercial apparatus has already been built for 220-kv. operation.

It was of great present theoretical and probably future practical interest to determine experimentally if there was a discontinuity in the established laws and curves at a million volts or over. Although no deviation was expected, no one could be certain until actual tests were made. It might, for instance, be considered that because of the great length of lightning sparks the air must be relatively weaker at extreme voltages.

Tests on potentials up to about 1,100 kv. were made on the various elements entering a transmission line. The results secured were as follows: (a) The spark-over curve showed no discontinuity. The spark-over at 1,100 kv. was found to be about 105 in. (b) The spark-over curve between 75-cm. spheres showed no great deviation from calculated values. (c) Tests were made on strings of line insulators and the spark-over voltages proved to be as expected; for instance, a string of eighteen standard suspension insulators arced over at about 900 kv., while a string of twenty-two insulators did not arc over at more than 1,000 kv. (d) Visual corona tests were made on brass-tube lines 3½ in. in diameter operating single-phase. The corona starting voltage (about 900 kv.) checked closely with the calculated value.

While thus far laboratory experiments have been conducted only on these extreme potentials they have demonstrated clearly the possible future trend of development. For many years the super-power plant erected at the mine mouth with its high-tension lines extending into far-distant territory has been a dream, in some cases now approaching a reality. Demonstrations such as those made at Pittsfield and here described brings its fullest realization appreciably nearer.

Approved Methods of Fitting Pinions to Their Shafts

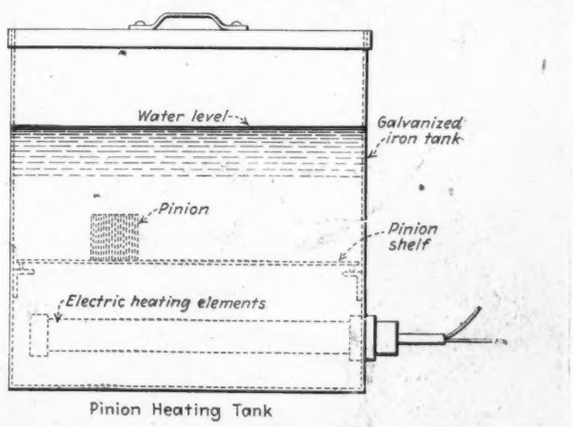
A Clean Even Fit Upon the Shaft Is a Prime Requisite —Drive Should Not Be Made Through the Key, Which Is Merely a Safety Device in Case Pinion Should Tend to Slip

By H. H. Johnston*
East Pittsburgh, Pa.

MANY details must be observed in placing motor pinions upon their shafts if successful results are to be uniformly achieved. Though the process of installation is by no means either difficult or complicated, highly important essentials are sometimes overlooked, either through ignorance or otherwise. This omission often results in failure. Pinions that are merely slipped onto their shafts with the nuts tightened will not operate satisfactorily and probably will loosen and cause the failure of parts other than the pinion itself. A key between pinion and shaft is not, as is sometimes believed, for the purpose of driving the gears, the load being taken by the key. The drive should be accomplished rather through a "press fit" or a "shrink fit" of the pinion upon the motor shaft. In reality the key is a safety device in the event that the pinion should loosen from its grip upon the shaft.

Pinions may be applied by means of either pressure or heat. In either case when placing them upon motor shafts with taper fits it is necessary to have the tapered surfaces of both shaft and pinion clean and free from burrs. The bore of the pinion should be in actual contact with not less than three-quarters of the surface of the shaft taper. This can be checked up by rubbing on Prussian blue, thin red lead and oil, or thin lamp black and oil, and then fitting the pinion onto the shaft.

It is important also to note that the pinion keyway is of proper size for the key on the shaft. The pinion should not bind on either the top or the sides of the key, nor should it ride the key when pressed finally home. Other points to note are that the pinion keyway can be 0.002 in. wider than the key but must not be narrower, for in such a case the pinion could be forced to place only against the pressure of the key. Between the top of the key and the bottom of the keyway in the pinion a clearance of $\frac{1}{64}$ in. is permissible. The key corners should be rounded to prevent them from cutting.



HEATING PINION IN BOILING WATER BEFORE FITTING ON SHAFT

A galvanized-iron tank is employed, the lower part being used for the electric heating elements and the upper for the water to be boiled, and for the pinion which is to be expanded by the influence of the heat. Time of boiling, 30 minutes. Method suited to pinions of 125-hp. motors. Where pinions are over 3 in. in diameter an hour's boiling is necessary.

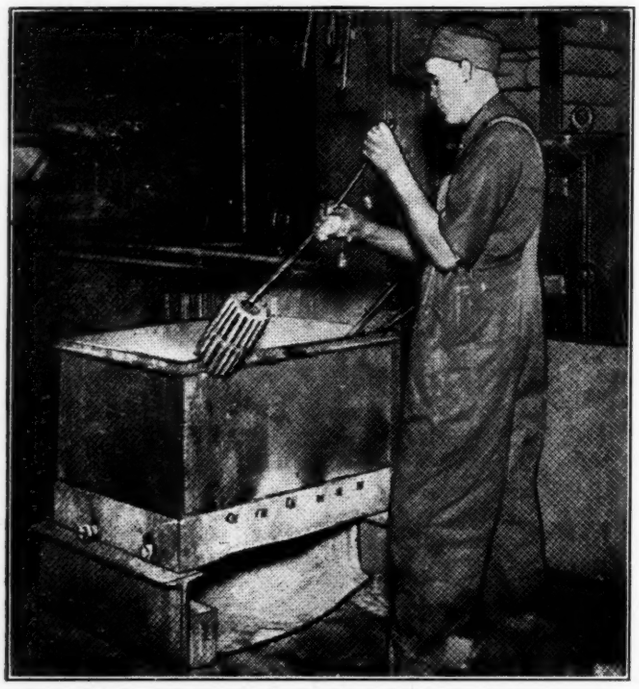
*General engineering department, Westinghouse Electric & Manufacturing Co.

Where pinions are put in place by the aid of heat, satisfactory results can be obtained without the use of a high-pressure press. The process is simple but varies slightly for different sizes of motors. For machines up to 125 hp., pinions with bores 3 in. in diameter and less are heated in boiling water for thirty minutes. Pinions exceeding 3 in. in bore diameter should be so heated for one hour.

When the pinions have assumed the temperature of the boiling water (100 deg. C. or 212 deg. F.) they are removed from the liquid and the bore is quickly wiped clean. Before the pinion has had opportunity to cool it is slipped onto the shaft and tapped to place by means of a copper bar or with a 6- or 8-lb. hammer, using a heavy piece of wood or copper between it and the pinion. This tapping is done evenly around the end of the pinion, three or four blows being struck. It should be noted that the purpose of tapping is not to secure a drive fit but to make sure that the pinion is well seated. When fully home the nut and lockwasher can be put in place and drawn up tightly by using a wrench with a 3- or 4-ft. lever arm.

On motors of more than 125 hp. the pinions should be heated with a gas flame applied within the bore in such a manner as not to touch the teeth, as the heat might affect the temper of the metal. It should take 45 to 75 minutes to bring such a pinion up to a temperature of 125 deg. to 150 deg. C. (251 deg. to 302 deg. F.) In measuring the temperature the bulb of the thermometer should be placed against the pinion between the teeth, the surface where the bulb touches being made perfectly clean by rubbing with emery cloth.

It is important to protect the exposed end of the thermometer from the gas flame. This may be accomplished by covering it with asbestos cloth. When the pinion has attained the temperature above mentioned it may be removed, and the bore wiped clean and then put on the shaft by the same process of tapping as has been described for the 125-hp. motors.



REMOVING PINION WITH HOT-WATER BATH

The pinion being removed from the tank its bore is quickly wiped clean. It is slipped onto the shaft before it has had a chance to cool.

DRIVING PINION ON SHAFT WITH COPPER BAR

Care has to be taken to prevent the pinion being injured in driving. Either a copper bar should be used for this purpose or a 6 or 8 lb. hammer with a piece of copper placed between it and the pinion. Not more than three or four blows should be struck and these should be disposed evenly around the end of the pinion.

Suitable heating equipment for pinions used on motors of 125 hp. or less consists of a galvanized-iron tank provided with a shelf upon which the pinions may be placed at about the center of the tank. A gas flame, steam coil or an electric element can be used to heat the water. To prevent rusting and to insure a clean surface at the pinion fit, washing soda should be used in the proportion of about ¼ lb. to each five gallons of water.

Any furnace may be used in which the pinions can be heated, provided it is so arranged as to prevent the teeth from coming in contact with the flame. Pinions used on motors up to 125 hp. are heated by a flame so regulated as to keep them at a temperature of 100 deg. C. (212 deg. F.). Those used on machines larger than 125 hp. are kept at 125 deg. C. (257 deg. F.) until the mechanic is ready to apply them to the motor shafts.

When pinions are put in place after boiling in water, they will hold against a pressure of twelve to twenty-five tons. Those heated to a temperature above 125 deg. C. but not more than 150 deg. C. will hold against a pressure of forty to eighty tons, depending upon the diameter of the pinion bore and the length of its fit. If the above processes for applying pinions are followed, it is possible to make them remain in place and function satisfactorily under the hardest loads imposed on the motors.

Pinions can be cold-pressed onto motor shafts by wheel presses. Twelve to twenty-five tons pressure will be required for pinions used on motors up to 125 hp., and forty to eighty tons for those on motors exceeding this size. Measured from the point where the pinion is in place and firmly seated on the shaft before pressing, pinions with bores up to 3 in. should advance on the shaft approximately $\frac{1}{32}$ in., those with 3- to 4-in. bores should move approximately $\frac{1}{16}$ in. and those with 4- to 5½-in. bores should advance $\frac{1}{8}$ in. under the pressure necessary to hold them in place.

Why Leave Anthracite Preparation to the Mercy of Mine Superintendents with Pressing Underground Duties?

To Reduce Degradation, to Keep Good Coal from Slate Dump, to Clean Coal Thoroughly and Size It Advantageously and to Effect These at Minimum Cost Are Among the Many Duties of the Breaker Foreman

By D. C. Ashmead
Kingston, Pa.

MANY of the processes in the preparation of anthracite are susceptible of improvement, sufficient care not being given as a rule to avoid the degradation of the product to lessen the quantity of coal going to the slate pile and to prevent the mixing of the more expensive oversize with coal of any particular grade and to provide that the undersize shall be about that, and yet not more than that, which the recognized tolerances permit.

The breaker foreman is a boss neither with time for accurate observation nor with equipment for experiments. His immediate superior is a mine superintendent who knows mines but not breakers and has no time for a close study of preparation. Why not put the preparation of coal under a separate head, leaving the personnel to the breaker foreman?

Improper or inadequate supervision may readily lower the percentage of desirable sizes. In this connection breakage or degradation should first be considered. A general manager of one of the large anthracite-producing companies states that 10 to 15 per cent of the mine output is broken within the breaker. By this he meant that the larger sizes are broken down to smaller sizes, but not that this proportion of prepared, or domestic, sizes was broken to steam sizes or slush.

Loss due to breakage is unquestionable, however, and doubtless could be much reduced if existing methods of moving coal through the breaker were thoroughly studied and so altered as to obtain the best possible results. How much actual cold cash could thus be saved cannot, unfortunately, be determined. The results obtained would vary widely with the field but would be appreciable in any section.

Coal going to the dump forms the second increment of loss in breaker operation. Under present methods of supervision it is practically impossible for the breaker foreman to watch this detail as closely as its importance warrants. Though it is quite true that this loss affects chiefly only the smaller sizes, the quantity of good coal thus sent to waste not unfrequently amounts to as much as 4 per cent of the output. In most instances it is admittedly much smaller than the figure here named, but if only 1 per cent could be saved, in a year's time its cash value would be material.

When a carload of coal leaves the breaker it should hold only coal of the grade it is supposed to contain together with the allowable percentage of undersize. Where the coal is of pea size or lower it should not contain any oversize. All oversize in such cases is a loss to the producer and if he is not at pains to exclude it he cannot realize his legitimate return. Proper supervision would do much to correct this and render possible the receipt of full value by the company. Of course watching this detail is a part of the breaker foreman's duties but it is difficult for him to do so at all times, as I hope to be able to show conclusively later.

In preparing the various sizes of anthracite it is customary to allow a certain percentage of smaller material in any shipment. The omission of this coal means a loss to the operator where the coal is smaller than egg. This allowable percentage of undersize for which the breaker foreman and coal inspectors are jointly responsible often is overlooked. Of course if competition grows keen it sometimes becomes necessary to decrease the amount of off-size coal that may be included in shipments of any particular grade.

At present supervision of preparation is about as follows: The breaker foreman has immediate charge of all operations in the breaker. It is his duty to see that the machinery functions as intended, that it is properly lubricated, that repairs are made promptly, that the men employed perform their respective duties, that no coal goes to the slate bank and no slate to the coal car, that breakage is kept down as far as possible, that in sizes below pea no oversize is shipped and that the included undersize closely approaches the allowable limit.

This appears to be a job that no one man alone can handle efficiently. The breaker foreman reports to the superintendent, who in turn is answerable to the general manager. The superintendent has not only the breaker but the whole mine under his care. Consequently the time that he can devote to the preparation plant and processes is small.

In many instances also the superintendent has had little or no actual breaker experience, having come up through either the engineering or operating department. As a result his knowledge of the minutiae of preparation processes is limited and his ideas and opinions concerning them are next to worthless. As a result best-demonstrated practice may not be followed, the methods and means of preparation adhered to may be conspicuously antiquated and the company may thus be losing the money that adherence to best practice, if adopted at that particular operation, would effect.

It is a physical impossibility for the breaker foreman himself to see to it that all machinery and processes throughout the entire building are at all times functioning properly. A breaker is a large structure of great height. Numerous operations take place within it, and no one man can continuously supervise all of them. The foreman can neither make the tests necessary to

ascertain if best possible results are being obtained nor conduct the experiments that would determine what might be improved.

It is, of course, necessary that the superintendent be held responsible for breaker operation, as otherwise he would not be concerned with the quality of the coal reaching the breaker. At the delivery end of the building, however, the character or quality of the product is carefully inspected to make sure that it complies with certain definite standards. If the prescribed limits of excellence are not attained it is condemned and sent back through the breaker for re-treatment. All this is done in order that sales of the product may be maintained.

Why should not the slate going to the bank be examined? Why are not the amount of degradation, the percentage of small sizes entering any prepared grade, the proportion of oversize watched with equal diligence? Why are not new and improved methods of preparation studied and tried in order to fix their applicability to the particular breaker in question and the coal it handles? The breaker foreman constantly watches the costs of production in the endeavor to keep them down; consequently he lacks the time to seek out those processes or practices that would augment production and enhance the value of the product.

It would appear that some means might be devised whereby the results of preparation might be greatly improved. Probably many expedients might be adopted to this end, among which the following might well be suggested: A separate unit of the organization known as the preparation department should be formed. It would have a superintendent of preparation at its head whose sole duty it would be to supervise the treatment given the coal. He would pay particular attention to increasing the value of the product and decreasing the losses arising from waste. Under this superintendent would be several assistants who would have charge of some particular phase or process. Under these assistants would be a corps of inspectors. Men in this department would have no authority over the breaker foreman, but they would keep constant watch and make frequent tests of the breaker product. Their efforts continually would have as their object the improvement of product, the lessening of waste and a lowering of cost.

Daily reports would be made by this department to the colliery superintendent in which recommendations for changes of a minor character might be made. Copies of such reports would go to the general manager and to the district superintendent while of course a copy would be retained by the head of the preparation department. If important or radical alterations were suggested these would, of course, be referred to the proper officials and if approved would be executed by the proper department of the colliery.

Composed of a number of men of the proper kind whose sole duty it would be to determine by trial and experiment the means and methods productive of best results in preparation it hardly appears possible that such a department could be anything but a success, nor that it would fail to pay for itself in less than a year's time. In addition to the duties outlined above, provision should be made whereby these men might be enabled to visit other plants both of their own and other companies, so that they might observe the preparation methods followed by others, adopting the most efficient to use in their own plant.

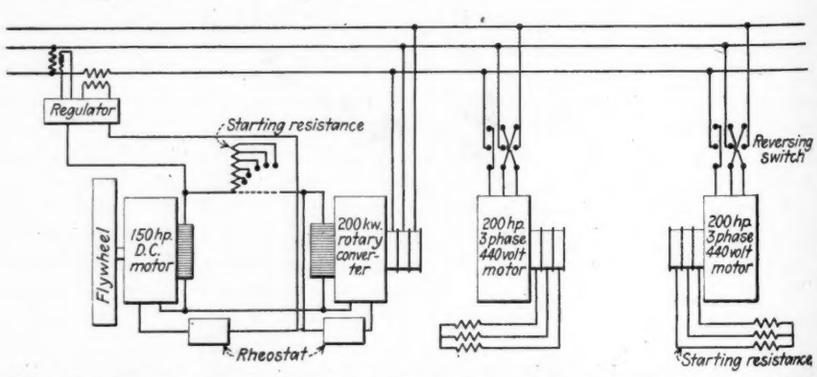
Scheme for Meeting Peak Hoisting Loads*

By J. L. Knight†
Glen White, W. Va.

PEAK loads on a mine hoist may be quite troublesome, and many means have been adopted with more or less success to eliminate or counteract them. One of the oldest and best known means so used is the flywheel set.

The accompanying illustration shows a proposed method of caring for a peak load of this kind. A slip-ring induction motor or motors will be used for hoisting. A rotary converter is connected to the line as shown and to its direct-current end is connected a compound-wound direct-current motor upon the shaft of which is placed a heavy flywheel. When there is no load on the hoist motor or motors or when the load is light the regulator cuts resistance into the field circuit of this machine, decreasing the counter voltage and causing it to run as a motor. When the load on the hoist or hoists rises above a predetermined amount the regulator cuts out resistance, strengthening the field of the flywheel motor and causing it to run as a generator under the action of the flywheel, thus pumping power back into the line through the rotary converter. The field of this machine, being in series with that of the flywheel motor, will give an improved power factor under heavy load over that obtaining if the induction hoist motor or motors simply drew energy from the transmission line.

If the method as above outlined is practical it will effect a large saving in cost of equipment over that necessary with the usual flywheel motor-generator set because in the ordinary process of mining the rotary converter would be simultaneously available for equalizing both the mining and hoisting load. Furthermore, the equalizer is independent of all other equipment, so that in case of trouble developing in either the converter or the flywheel unit the hoists may be operated directly from the power line.



WILL FLYWHEEL ON DIRECT-CURRENT MOTOR HELP HOISTS OVER PEAK?

The hoist motors are shown at the right. A rotary convertor connected to the line drives a 150 hp. direct-current motor carrying a heavy flywheel. When a peak comes on the hoists the flywheel drives the direct-current motor as a generator feeding current back to the line by way of the rotary convertor, thus assisting the hoists over the peak.

*The author requests constructive criticism of the scheme here described.

†Chief Electrician, E. E. White Coal Co.

Hoist and Compressor on Common Bedplate Driven by Internal-Combustion Engine

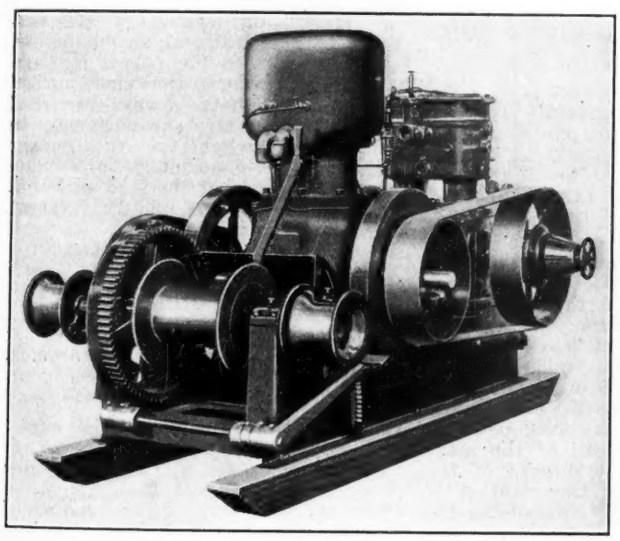
IN MANY places about the mines a need exists for a hoist of small size as well as for a small air compressor. Generally speaking such a machine or machines would be used in various kinds of construction work such as slope sinking, the driving of drainage tunnels, sewer digging, the erection of steel and wood trestles or buildings and the like.

To meet this need as well as for use in general contracting, the Novo Engine Co., of Lansing, Mich., has placed upon the market the combination hoist and air compressor shown in the accompanying illustration.

The outfit consists of a 15-hp. internal-combustion engine geared to a non-reversible hoist, while a belt from the engine shaft leads to a pulley on the shaft of a 6 x 6-in. air compressor mounted on an extension of the channel-iron bedframe joining the other two machines. Both hoist and compressor are fitted with clutches so that either may be operated independently of the other.

The hoist is equipped with a drum capable of holding 700 ft. of ½-in. cable. Either end of the drum shaft is fitted with a niggerhead and the drum is provided with a lock so that it may be disengaged from the shaft while these niggerheads are in use. A band-friction clutch is mounted on the intermediate shaft controlling the operation of the drum and niggerheads and a powerful asbestos-lined foot brake equipped with a ratchet lock holds the load.

With a capacity of 60 cu.ft. per minute the compressor is of sufficient size to drive a hand rock-drill or riveting hammer, do calking, light drilling, reaming or similar operations. It is provided with a circulating pump and tank for cooling water, and a visible overflow showing the pump's performance. An unloader cuts out the compressor when the supply of air exceeds the demand. This device is adjustable and entirely automatic in its operation.



UTILITY COMBINATION ENGINE FOR SLOPE SINKING OR TUNNEL DRIVING

Internal-combustion engines even at coal mines have their uses. For a small temporary installation it is not advisable to bring in a boiler and at a permanent location it is not desirable to use the sizable boilers of the completed plant for the smaller purposes of slope or tunnel driving. With the internal combustion engine less attention and labor are necessary than with a steam plant. In any event for opening work some small class of machinery, steam or internal combustion, must be used for the purpose, so why not use the latter, which is more compact, lighter and less expensive?

Crankcase and cylinder of the compressor are separate castings. Lubrication is effected by the familiar splash system, obviating all necessity for lubricators, grease cups and similar devices. The air valves are of light sheet steel. They thus seat quickly with little wear and are extremely quiet in operation. No valve springs are necessary and the port openings being large, air enters and leaves freely with slight friction. This construction is patented.

Of course this combination of machines is not intended for heavy lifting or the driving of a fleet of tripod rock drills. If such work is to be performed heavier machines will be necessary. For comparatively light work, however, such as slope sinking in isolated localities, the erection of steel or wooden structures, the laying of sewer or water pipe and many other operations it can be employed to advantage.

At Gassy Mines Care Should Be Taken to Avoid Firing Gas on Surface

IN MANY plants where safety lamps are used and gas is plentiful much of the air in the return comes from places where the gas percentage is relatively low. The air from these places dilutes the gas from other quarters to such an extent that the aggregate is harmless. But that is not always the case.

Certain it is that if the air at the foot of the shaft is dangerously contaminated with methane the same air at the surface before it has mixed with the free air will be equally dangerous. Where the fan is stopped the amount of air passing through the workings is less, the methane content is still higher and the need for care at the surface is greater and extends over a larger area. At a recent meeting of the Midland Institute of Mining, Civil and Mechanical Engineers, of Great Britain, held at Sheffield, Mr. Hays said that at the Metropolitan Colliery in Australia, outbursts of gas frequently occurred of such severity that it was necessary to use safety lamps on the surface at night whenever the fan was shut down on account of the presence of gas at the shaft top. H. Rhodes added that at No. 2 pit of the Durban Navigation Collieries, Natal, there were two 18-ft. diameter circular shafts 560 ft. deep. In January, 1920, they had seventeen working faces 14 ft. wide. The fan was stopped at 12 m. on Saturday in order to take off the fan belt. At 2:30 p.m., when the work was in progress, a man standing in the fan house, outside the fan drift, close to the belt, lit a cigarette and the whole place blew up. The tops of both shafts were blown off, and the plant was absolutely wrecked. The quantity of air circulating at 12 m., when the fan was stopped, was said to be 120,000 cu.ft. per minute yet though natural ventilation diluted the gas the quantity emitted in 2½ hr. was enough to produce the serious results described.

THE BUDGET FOR the various municipal departments of the City of New York for 1922 provides for appropriations totalling $6,436,973.37 for the purchase of fuel. This is a decrease of $1,007,887.95 from the amount granted for this year. The Board of Education was hit the hardest in the pruning, its request being chopped $377,647.45. Other branches of the city government that suffered included the Department of Water Supply, Gas & Electricity, $127,420; Department of Public Welfare, $121,400; New York Public Library, $21,164; Department of Correction, $46,567, and the President of the Borough of Manhattan, $38,500.

Problems of Operating Men

Edited by James T. Beard

Calculating Room Switch, Fixed Points

Two Kinds of Room Switches in Mining Practice—Fixed Points Require Shorter Lead and Follower Rails Than Latches—Knowing Frog Number, Plat Switch to Scale and Measure Desired Parts

I HAVE watched with much interest the discussion started by the inquiry of a West Virginia mine foreman, *Coal Age*, Apr. 7, p. 629, asking for a good rule to determine the proper kind of frog to use and other data required in laying a mine switch. Although the inquiry does not state the kind of switch intended, several correspondents have assumed that the reference is to a room switch.

An Indiana trackman, replying to this inquiry in the issue, Aug. 18, p. 261, calculates the length of lead rail, for a track gage of 3½ ft., as 7 ft., for a No.-1 frog, and 14 ft. for a No.-2 frog. From his reference to a previous correspondent, who suggested using a guardrail at the fixed point of a room switch, I take it his own calculations are intended to apply to a similar switch with fixed points; but in that case they are wrong.

Both the guard and the follower rails of a switch that has fixed points are always shorter than the same rails in a latch switch. For example, for a gage of 3½ ft. and using fixed points, the length of lead rail for a No.-1 frog is 5½ ft. and for a No.-2 frog 10½ ft., instead of 7 and 14 ft., respectively, as he figures.

Switch with Fixed Points Not Treated by Authorities

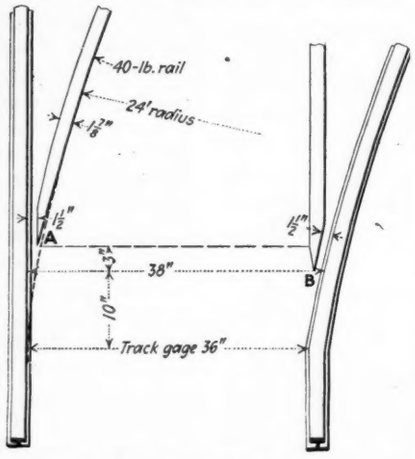
As far as I have been able to learn, authorities on mine tracks do not refer to the difference in the lengths of the lead and follower rails, in the use of fixed points and latches. The formulas commonly given apply only to latch switches. On this account, I have found it necessary to plat such a switch to a scale of, say 1 ft. to the inch, and make the necessary measurements on this plat, to determine the different dimensions required.

For the sake of practice, a short time ago, I platted a room switch on a 3-ft. track gage and using a No.-2 frog and a radius of curvature, for the lead rail, of 24 ft., which corresponded to a room switch laid in our mine. The plat was drawn to a scale of 1 in. to the foot.

In order to draw the curved rail on this scale, I used a yardstick with a graphophone needle stuck through it, for a center. A sharpened lead taken from a pencil was inserted at a distance of 24 in. from the needle. The length of the lead rail, scaled on this drawing, from the point of frog to where the outside of the lead rail touched the gage line of the straight rail, was 9 ft. 3 in.; and the measurement from the same point of frog to the fixed point on the straight rail, or what is called the "lead of the switch," was 8 ft. 8 in.

Going into the mine, I measured one of our manufactured switches of this kind and found they tallied with the measurements scaled from the drawing, except that the lead rail was 3 in. shorter than the measurement taken from my plat, the lead rail in the mine being 9 ft. in length.

I am enclosing a sketch giving the dimensions and relative position of the fixed points, as taken from a room switch in the mine. No explanation of the drawing is needed further than to say that the point *A* is made a little higher than the straight rail close to



ROOM SWITCH WITH FIXED POINTS

it, so as to lift the tread of the wheel clear of the main track when the car takes a switch.

It will be observed that in a distance of 10 in. before the carwheel reaches the fixed point *B*, on the side of the follower rail, the track gage has widened from 36 to 38 in., a difference of 2 in. As there is a clearance of only 1½ in. between the fixed point at *A* and the straight rail of the main track, there would be danger of the wheel flange striking the point *A* if that point was exactly opposite to the point *B*.

In order to avoid this taking place, the point *A* is set back 3 in. behind the point *B* and the fixed point *B* of the straight-rail is beveled off a half inch or more on the gage line. This enables the wheels to right themselves, by shifting the truck to the left before the other wheel reaches the point *A*.

In the same manner, the fixed point of the lead rail is beveled a similar amount on the gage-line side, this bevel extending back a somewhat greater distance to conform to the track gage as measured from the follower rail. In each case, the off sides of the fixed points are beveled to correspond to the gage line of the rails lying next to them.

My advice to the West Virginia mine foreman is that he inspect some of the successful mine-haulage systems to be found in his own locality, or elsewhere, and pattern his switches after those known to be giving satisfaction. The switch shown in my sketch is constructed of 40-lb. iron and adapted to the use of 8-ton gathering locomotives.

The practice here is for the miners to push their cars in the rooms, and the locomotive backs into each room-neck to get the cars standing there. No cars are allowed to stand on the entry. The fixed-point switch is used to enable the motorman to make better time, without fear of a switch latch being set for a room, which would mean disaster.

It may be of interest to state here that, using a 24-ft. radius of lead rail, a 3-ft. track gage, in an entry having a 4-ft. manway, or clearance, on the side of the track where the rooms are turned, if the room sights are set 6 ft. from the outby rib of a room and the fixed switch points set 18 ft. back from the line of the room sight, the track will center on the room sights and give a good clearance at the corner of the outby rib of the room.

Before closing, let me say with reference to guardrails at switch points, I have often seen them used in mule haulage and where the men pushed their cars. I have always regarded them as a temporary arrangement. In a fixed-point switch, the rails on the follower side, should not be lower than those on the side of the lead rail; but the straight track should be level at the switch points.

Bayview, Ala. JOHN WALLS, SR.

Standardizing Mine Switches

Need of standard mine switches—Poor track conditions discourage the men, prevent good work and increase expense of upkeep and operation.

GOOD track conditions in mines, particularly with reference to room switches, is a phase of mine practice that has not been given the attention it deserves. The reading of several recent letters, in *Coal Age*, discussing a number of details regarding room switches has suggested to my mind the growing need of standardizing these switches.

Most mining men will agree that the question of having good room switches is an important factor in the economy of mine operation. To get the cars in

and out of rooms quickly and without the risk of derailment is a matter that has always proved a source of trouble in mines where good switches are not provided.

There are many mines that still continue the use of old and worn-out switches that should have been scrapped long ago. There are mine foremen who, with an eye to keeping down the cost-sheet adopt any kind of makeshift means and methods in laying room switches. They fail to realize that this work requires good material and should be in the hands of expert trackmen who understand the laying of a switch.

Time and again we hear the argument advanced, or the reason given for having poor switches and bad tracks, that "the company cannot afford anything better." In truth, the fact is just the opposite, if it was only known. No company can afford to incur the expense and loss due to poor track and switches, which cause delay and are a constant expense to keep in repair.

Opinions Differ as to What Is a Proper Standard

Owing to the difference of opinion among mining men as to what constitutes standard track and switches, under the varying conditions in mines, this question will always be open for discussion. Practice differs in respect to the weight of rails to be used, the kind of frogs, dimensions of switch rails and the manner of laying the switch.

One mine, in my acquaintance, developed a daily capacity of 1,000 tons before the management began to realize that the use of 25-lb. rails and 6-ton locomotives on the main haulage road were far from being adequate. The light iron in use on the roads required constant repair to keep the tracks in order and it was finally decided to replace these light rails with 45-lb. iron.

Another lesson the company learned was the inability of workmen to accomplish results when out of humor because of being compelled to work under bad conditions. To the hard-working miner, or the industrious driver, the most annoying thing that can happen is the derailment of a car. About the hardest work a brakeman or driver has to perform is to lift the car again on the track.

Men Accomplish Double Under Satisfactory Conditions

This company found that men will accomplish twice the amount of work, with less fatigue, and find less fault when they work under satisfactory conditions. In the present instance, this was brought about by the company scrapping all out-of-date equipment and all makeshift material and putting in its place what was good.

Particular attention was given to track arrangements, the road was well ballasted and as many good ties placed under each switch as were required to afford a solid bed. It was a hard fight to bring certain of the officials to believe that this mine could be developed to produce 2,000 tons of coal a day. It required getting them out of the rut into which they had fallen.

The new management, however, continued to insist on a larger daily output, although it led to the resignation of a few of the mine officials. Since making these changes, however, the output has been nearly doubled, while there has been no material increase in the costs for repairs.

The haulage crews are actually accomplishing twice as much work with apparently less effort and are in far better humor, while hauling accidents have been decreased 60 per cent.

Pikeville, Ky. George Edwards.

Certified Men in Demand

Analyzing the so-called practical foreman—Province of the mine foreman—The truly qualified man possesses technical knowledge—Large operations employ only certified men.

PREVIOUS to the enactment of legislation requiring the certification of mine foremen and firebosses, the bituminous mines of this state were in charge of so-called practical foremen. The large majority of these men were practical *as bosses*, but could hardly be so considered *as foremen*.

If such men, as a class, were efficient foremen we ask: Why was it necessary to establish a standard of qualifications for that office? The fact is evident that standardization was required to increase the economy of coal production and secure greater safety in the mine.

Unfortunately, on the enactment of the Workmen's Compensation Law, in Pennsylvania, which became effective Jan. 1, 1916, the certification law was modified, authorizing coal operators to employ men in these positions who were, in their judgment, equally competent with certified men.

Need of Impartial Comparison in Selection of Men

It cannot be denied that many operators have assumed to exercise this right, by choosing men to serve as mine foremen and firebosses, from a purely personal and interested standpoint. However, to question these motives would be irrelevant, being based on pure assumption.

In order to make an impartial comparison between certified and uncertified men, we must seek to ascertain why the certification law was found to be necessary, and understand more clearly the relation of the operator to his employees acting in an official capacity.

It would appear to have been the generally accepted opinion of a large number of coal operators and mine foremen as well, that the chief if not the sole duty of a foreman is to produce coal. The measure of a foreman's ability was the ratio that the cost-sheet bore to the daily tonnage of the mine.

In most cases, it can be said, that little thought or attention has been given to the question of safety or the conservation of natural resources, which were matters of less importance than getting out the coal at a minimum cost.

Mine Officials Must Possess More Than Practical Knowledge

Then, it came to be realized that the true province of a mine foreman did not cease with getting out the coal, but in providing greater safety of operation and more economical extraction of the coal. The question was asked: Can the purely practical man, who has not made a study of the principles of mining, possess the qualities that fit him for fulfilling these conditions? It was answered in the negative.

To meet this demand, legislation was enacted requiring the examination and certification of men for the positions named. This enactment is concerned solely with regulations for safety to lives and the security of property, which are basic requirements of law for the protection of the people.

A foreman who is wholly practical, today, is a man who not only knows by experience what to do, but has learned how the work can be done in the safest and best manner. The man who does not possess this knowledge and use it in the discharge of his duties does not measure up to the capabilities required of the present mine foreman or fireboss.

Today, a truly qualified man must possess technical knowledge, which involves the knowing *how* and being able to *do* practical things in an intelligent way. He must not only know what and how to do, however, but must understand the reason *why*.

Are Examinations of Mine Officials Too Technical?

Objection is often heard to the effect that mining examinations are too technical, which may be true in some few instances. The discouraging feature to many men is the mathematics involved in solving mining problems. A successful foreman, however, *must* know the rudiments of arithmetic, which will enable him to work out most of the questions asked in mining examinations.

It is true, mine ventilation involves some simple formulas. Also, questions on pumping, haulage and timbering frequently require the use of formulas. Few foremen will deny that it is important to know how to solve these questions in the daily work of the mine.

Undoubtedly, there are many able men among our uncertified foremen; but it will be generally agreed that they would be more efficient if they possessed a knowledge of the science of mining in addition to their practical experience.

Finally, that the worth of the certified man is well established is demonstrated by the fact that, today, our largest coal operations will not employ uncertified men in official positions. Such operations have more at stake than would permit them to consider the slight reduction possible in the employment of uncertified men. Efficient management is of far more importance to them than the saving of a few dollars in the salary of a foreman or a fireboss.

Maple Ridge, Pa. I. C. Parfitt.

Renewal of Certificate

Requirement of renewal of certificate would keep men up to date and studying—Illinois law requires mine examined by certificated men.

LIKE my friend, W. M. Chambers, writing in *Coal Age*, Sept. 8, p. 382, I believe the only way to keep men up to date on mining matters is to require the renewal of the certificate every few years.

For a long time past, I have had this subject on my mind and have wondered that the law does not require

that a man should pass another examination and get a new certificate, from time to time. What seems strange to me, is that, in many mines, an uncertified man is allowed to have authority over men holding certificates.

From what has already been said by other writers, such is the case in Pennsylvania. In many of the mines in our state, the assistant mine manager (assistant foreman) holds no certificate and is neither qualified as a miner nor familiar with first-aid and rescue work.

Our law requires that the mine examiner (fireboss) shall be a certificated man, as well as the mine manager (foreman). It has been my desire, for some time, to study and secure a certificate and, for that purpose, I have been attending a mining school away from home.

Where the state mining law authorizes coal operators to employ men who have no certificate, it is not strange that men from the farm seek work in the mines and get positions for which they are not qualified, after working but a short time underground. It is no encouragement to men to study for a certificate when that is the case.

Springfield, Ill. A. F.

Do Years Make Safe Workers?

Past experiences — Conditions favor green hands who are given less dangerous work—More expected of old experienced men—Difficult to say which class make the safer workers.

I HAVE been reading the article entitled "Experience vs. Safety," *Coal Age*, Sept. 15, p. 422, and it revives some of my own past experiences in the training of men regarding their personal safety.

Going over these experiences of the past years in my mining career, I find that the green men have much in their favor. These men are rarely, if ever, put to work where there is danger, but are started in a comparatively safe place in the mine and given in charge of an experienced man as a "buddy."

On the other hand, more is expected of older and experienced men, who are supposed to look out for themselves. Where dangerous work is to be performed it is the experienced man that is chosen for the place. No foreman would think of putting a green man to work drawing pillars, braking on a motor trip, or assisting the operator of a chain machine.

Green Hands More Teachable Than the Older Workers

By way of comparison, I have found the green hand more teachable and willing to listen to the instructions given him concerning his personal safety. I have found that he will keep his side of the room better posted, than the old man who has him in charge. The new man seems to be more alert to danger and more careful to protect himself than one longer in the mine.

However, this attitude of a green hand soon wears off when he observes the actions and habits of his more experienced buddy. Each day finds the former more willing to take risks and less careful to set his posts promptly and keep himself protected. It is not long before he has fallen into the same indifferent manner of performing his work as men of longer experience.

The quality of self preservation is the first law of nature, but is not developed alike in all people. Regard for one's safety is more observable in proportion as the man is the more intelligent. Years of experience do not make safe miner workers. Men who have mined coal all their lives are frequently less capable of safeguarding themselves than the man new on the job.

Narrow Escapes of Old Miners

Talking with experienced miners, we often find that they have had a number of narrow escapes of which they seem to boast. They admit that they have been lucky in avoiding danger many times, and we are forced to conclude that it is not the result of their own care that they are still in the game. Long years on the job do not, therefore, mean a safe worker.

My conclusion is that, everything considered, it is difficult to decide which class of workers are actually the safer to employ. Experience in mining should make men more careful of their own safety; but here the old saying proves true, "Familiarity breeds contempt."

Of course, if it were possible to make a test between two mines—one employing green men exclusively, and the other operated by experienced miners—there would be no question but that the green men would lose by comparison.

Pikeville, Ky. George Edwards.

Inquiries Of General Interest

Rope Haulage in Slopes of Variable Grades

Haulage Rope Rubs Roof in Slope Where Grades Are Variable—Sag of Rope How Calculated—Will Shooting Down the Roof at Such Point Avoid the Trouble?

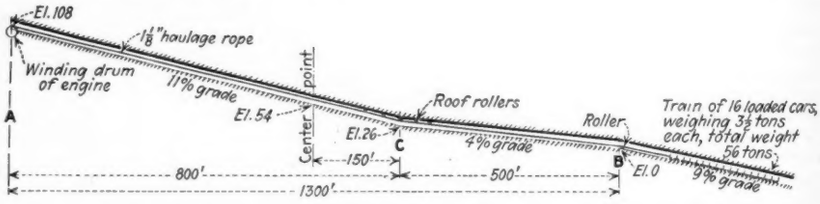
PLEASE explain the method of calculating the sag in a haulage rope, under the following conditions: We are hauling coal, with a 1⅛-in. rope, in a slope where the grades are variable. Starting from the surface, the slope dips for 800 ft. on a 11 per cent grade; then flattens out to a 4 per cent grade, for 500 ft., after which it falls on a 9 per cent grade to the inby parting.

The accompanying sketch shows the situation. When hauling a train of sixteen loaded cars weighing 3½ tons each, making a total of 56 tons, up the 9 per cent grade, starting from the inby parting at the foot of the slope, the rope rubs badly on the roof where the 4 per cent grade changes to 11 per cent. At this point, we have been using roof rollers, which need constant replacement.

It is thought that to shoot down a portion of the roof, here, sufficient to allow the rope to clear the roof would avoid the trouble. What we desire to know is how much the rope sags, at this point, when hauling a loaded trip of cars up the 9 per cent grade. Knowing this, it would seem possible to calculate the amount necessary to shoot the top so as to clear the rope and avoid the use of rollers in the roof.

We know that the rope sags in what is called a "catenary curve," but are unable to calculate the sag and will much appreciate the method being explained in *Coal Age*. H. M. K.

———, Tenn.



PROFILE OF SLOPE SHOWING GRADES AND ELEVATIONS

The first step in estimating the sag is to calculate the tension on the haulage rope when the engine is hauling a loaded trip up the 9 per cent grade. The necessary data have not been given; but we will assume a track resistance of, say 30 lb. per ton. The grade resistance, being 20 lb. per ton for each per cent of grade, is 9 × 20 = 180 lb. per ton, in this case, which makes the total resistance of track and grade 30 + 180 = 210 lb. per ton of moving load.

The tension or load on the rope is, therefore, 56 × 210 = 11,760 lb. Knowing the total weight of the rope (W) the length of span (S) and the tension of the rope (T); the sag or deflection (D), at the center between the two points of support, is calculated by the formula

$$D = \frac{WS}{8T}$$

The section of rope in question reaches from the winding drum at A to the roller at B, making the span, S = 800 + 500 = 1,300 ft. The weight of 1,300 ft. of 1⅛-in. rope, at 2 lb. per lineal foot, is W = 2 × 1,300 = 2,600 lb., and the tension or load on the rope is T = 11,760 lb. Substituting these values in the formula

gives for the deflection or sag, at the center of the rope,

$D = (2{,}600 \times 1{,}300) \div 8 \times 11{,}760 =$ say 36 *ft.*

The rope being supported at the two points *A* and *B*, the sag or deflection just found is measured, vertically, from the center of the straight line joining the two points. Calling the elevation of the point *B*, zero, the rise of the 4 per cent grade is $0.04 \times 500 = 20$ ft.; and the rise of the 11 per cent grade is $0.11 \times 800 = 88$ ft., making the total rise from *B* to *A* $20 + 88 = 108$ ft., which is the elevation of the rope at *A*. The elevation of the roof of the haulage road, at *C*, for a 6-ft. seam, is $20 + 6 = 26$ ft. The elevation of the sagging rope, at its center point, would be $\frac{1}{2}(108) - 36 = 18$ ft.

But, the point *C*, where the rope rubs the roof, is 150 ft. downgrade from the center point; and the fall of the straight line joining *A* and *B*, in this distance, is $150/1{,}300(108) = 12.5$ ft. From the center point, however, the rope approaches this line, approximately, as the square of the ratio 150:650; or $0.23^2 = 0.053$ of the total sag, which gives $0.053 \times 36 = 1.9$, say 2 ft., which makes the fall of the rope, from the center point to *C*, $12.5 - 2 = 10.5$ ft. This makes the elevation of the rope at *C*, $18 - 10.5 = 7\frac{1}{2}$ ft.

Assuming a Static Condition Rope Would Lie on Floor

It shows that, for a static condition and a pull on the rope of 11,760 lb., the rope would hang $26 - 7\frac{1}{2} = 18\frac{1}{2}$ ft. below the roof at *C*, if there was that headroom in the slope. Or, under a static condition and the estimated pull due to the loaded trip, the weight of the rope would cause it to lie on the rollers at the floor of the slope, the entire length of the roadway.

However, in rope haulage on a slope having variable grades the static condition never exists; but, where the grade changes as at *C*, the rope would bound violently up and down when hauling the loaded trip, owing to a dynamic condition resulting from the elasticity of the rope and variations in the tension or pull.

Again, we have assumed a track resistance of 30 lb. per ton of moving load. It frequently happens that, under bad conditions of track and rolling equipment, this resistance may reach 50 lb. per ton, which would increase the pull on the rope more than 1,000 lb. and give a less deflection than the estimated amount.

Moreover, if the rope has been in use for some time, its weight may be less than the estimated 2 lb. per lineal foot, which would again reduce the deflection of the rope at *C* and increase the trouble. In any case, however, it is not possible to estimate with any accuracy the amount necessary to shoot the roof, by calculating the catenary curve of the rope for a static condition.

Practically, the remedy for this trouble in hauling on a slope with varying grades is to straighten the grade as far as this is practicable throughout the length of the road, by lifting bottom for a distance on either side of *B* and ripping the roof for a distance on either side of *C*. This would mean, approximately, lowering the grade 5 or 6 ft. at *B* and raising it about 10 ft. at *C*. Conditions alone can determine whether or not this amount of work would pay.

Examination Questions Answered

Alabama First-Class Examination, Birmingham, July 25-28, 1921

(Selected Questions)

QUESTION—*What conditions are necessary in order to insure good ventilation in a mine producing 800 tons of coal per day?*

ANSWER—First, assuming the average output of coal is $3\frac{1}{3}$ tons, per man, per day, a daily output of 800 tons will require $800 \div 3\frac{1}{3} = 240$ men underground. To handle this output, under average conditions in the mine will require, say 10 mules. The Alabama Mining Law (Sec. 40) requires a circulation of at least 100 cu.ft. of air per minute, per man, 500 cu.ft., per mule, and as much more (Sec. 47) as the inspector shall decide is necessary for the proper ventilation of the mine. We will assume, therefore, in this mine, a circulation of at least 30,000 cu.ft. of air per minute. To insure good ventilation at the working face, this air must be distributed according to the requirements in each section, so as to dilute, render harmless and sweep away the noxious and explosive gases generated. Adequate means must be provided to maintain the required circulation in the mine, continuously.

QUESTION—*(a) Should a non-gaseous mine need as much air per man and mule as a gaseous mine? (b) What amount does the Alabama law require, per man and per mule? (c) Does it discriminate between gaseous and non-gaseous mines?*

ANSWER—(a) A mine generating gas in any considerable quantity will require more air, per man and per mule, than a mine free from gas. The Alabama law also authorizes the mine inspector to determine what volume of air, in his judgment, is required to properly ventilate the mine (Sec. 47).

(b) The law requires at least 100 cu.ft. of air per minute for each man and 500 cu.ft. per min. for each mule employed underground.

(c) In reference to mines generating gas in quantities sufficient to render the air explosive, the law requires: (Sec. 27) the mine foreman in charge shall hold a first-class certificate; (Sec. 30) the mine shall be sprayed or sprinkled; and (Sec. 32) a competent fireboss shall be employed, whose duty shall be to examine every working place in the mine before the men are permitted to enter for work, and to inform every man as to the state and condition of his working place, in respect to a dangerous quantity of gas therein. The examination for gas shall be made by the fireboss, every morning, using a safety lamp for that purpose. The fireboss is also required to leave a conspicuous sign or mark at the neck of each room and at a point 25 ft. distant from the face of each slope, drift or entry where gas has been found in dangerous quantity.

QUESTION—*Name a few important factors that must be observed, in order to insure efficient ventilation.*

ANSWER—A ventilator or other means of producing the required circulation of air must be provided that will be reliable. The air must be distributed according to the requirements in each section of the mine, and conducted to the working faces by means of doors, air bridges, stoppings and brattices, in such a manner as to sweep away the gases that would otherwise accumulate. Sufficient air must be provided and kept in circulation to render each working place healthful and safe. In addition to this, each working place must be carefully inspected, at frequent intervals during the day while the men are at work, especially if gas is being generated or the mine is producing much dust. Where safety lamps are in use, the velocity of the air at the working face should not exceed 360 ft. per min.

QUESTION—*If the water gage suddenly shows a rise of half an inch, without having increased the speed of the fan, what would you understand from this and what would be your movements? Answer fully.*

ANSWER—Assuming the fan is running at the same speed and the water gage is observed to take a sudden rise of half an inch, it is natural to suppose that the increased gage is due to a greater mine resistance, which is probably caused by some undue obstruction of the air current. This will call for an immediate investigation to ascertain the cause. It may be that a heavy fall of roof has blocked the airway at some point in the mine; or the obstruction may be caused by the movement of a particularly heavily loaded trip against the air, or the blocking of a crosscut with tool boxes.

QUESTION—*Name the different means of producing ventilation in mines; state what method you think the best and why?*

ANSWER—Natural ventilation is produced by a mine furnace heating the air in the upcast shaft, the furnace being located a short distance from the foot of the shaft. Also, in a few isolated cases, a waterfall in the shaft, or a windcowl at the surface, is used to produce circulation of air in the mine. These two types of ventilators are now obsolete. Mechanical ventilation is produced by some type of ventilating fan, either a centrifugal fan or a disc fan of the propeller type. The former is the more reliable in operation and commonly employed. In a few instances, ventilation is produced by a steam jet arranged at the foot of the upcast shaft. The centrifugal fan is the best type of mine ventilator in use.

Destination of Lake Cargo Coal Shipped During Season to End of September

WHERE the 18,117,000 tons of bituminous cargo coal shipped up the Lakes from the opening of the present season to Sept. 30 have gone is shown in the subjoined table, which also gives similar figures for 1919 and 1920. The year 1919 offers the better standard for comparison. Of the total tonnage, 14,162,000 tons, or 78.2 per cent, were shipped to American points, and 3,955,000 tons, or 21.8 per cent, to Canadian destinations. In comparison with 1919 there was an increase in total shipments of 436,000 tons, of which the larger part went to Canadian ports. The most important changes in distribution were the increase, both actual and relative, in shipments to points on Lake Superior and the decrease in shipments to Lake Michigan ports. The movement to American destinations on Lake Superior increased from 7,762,000 tons in 1919 to 8,650,000 tons in 1921, and was 47.8 per cent of the total shipments.

DESTINATION OF CARGO COAL DUMPED AT LAKE ERIE PORTS FROM OPENING OF SEASON TO SEPT. 30*

	1919		1920		1921	
Destination	Net Tons	Per Cent	Net Tons	Per Cent	Net Tons	Per Cent
American						
Lake Superior ports	7,762,000	43.9	5,684,000	38.9	8,650,000	47.8
Sault Ste. Marie and river points	276,000	1.6	424,000	2.9	265,000	1.4
Lake Huron-Georgian Bay ports	238,000	1.4	155,000	1.1	133,000	0.7
Lake Michigan ports	5,419,000	30.7	3,602,000	24.6	4,624,000	25.5
Port Huron and Detroit River	240,000	1.3	628,000	4.3	443,000	2.5
Lake Erie ports	59,000	0.3	28,000	0.2	47,000	0.3
Total American	11,994,000	79.2	10,521,000	72.0	14,162,000	78.2
Canadian						
Lake Superior ports	1,283,000	7.2	1,196,000	8.2	1,724,000	9.5
Sault Ste. Marie and river points	649,000	3.7	869,000	5.9	601,000	3.3
Lake Huron-Georgian Bay ports	577,000	3.2	613,000	4.2	681,000	3.8
Port Huron and Detroit River	287,000	1.6	305,000	2.1	289,000	1.6
Lake Erie ports	38,000	0.3	10,000	0.1	71,000	0.4
Lake Ontario and St. Lawrence River	853,000	4.8	1,090,000	7.5	589,000	3.2
Total Canadian	3,687,000	20.8	4,083,000	28.0	3,955,000	21.8
Grand total	17,681,000	100.0	14,604,000	100.0	18,117,000	100.0

*Statistics furnished by courtesy of Ore & Coal Exchange.

U. S. Chamber of Commerce to Educate the Public in Natural-Resource Problems

HALF of the difficulties of the natural resource industries would disappear if the public were well educated in their problems. This is the opinion of W. DuB. Brookings, the head of the natural resources production department of the Chamber of Commerce of the United States. This department is preparing an active program in an effort to render constructive service to the raw-material industries. In that connection it was pointed out that this work is supplementary to that of the various trade associations. It is believed, however, that this nationwide organization of business men can render great assistance to the industries and to the public by conducting a campaign of education intended to enlighten the public on the vital problems of natural-resource activities.

The organization of the natural resources department is just being perfected. An advisory committee has been named, of which C. S. Keith, president of the Central Coal & Coke Co. of Kansas City, is chairman. The other members of the advisory committee are J. H. Ross, president, Exchange Supply Co., Winter Haven, Fla.; J. E. Spurr, editor, *Engineering and Mining Journal*, New York; Christy Payne, president, Peoples and Hope Natural Gas Co., New York; E. T. Meredith, former Secretary of Agriculture, Des Moines, Iowa; Sidney J. Jennings, vice-president, United States Smelting, Mining & Refining Co., Boston, Mass.; R. V. Norris, mining engineer, Wilkes-Barre, Pa.; Van H. Manning, American Petroleum Institute, New York, and William N. Davis, president, Midcontinent Oil and Gas Association, Bartlesville, Okla.

It is the opinion of Mr. Brookings that nothing is of more importance in this day with its tendencies toward Federal regulation of business than to obtain for the natural-resource industries a high degree of public confidence. This, he believes, can be achieved if the public knows the real facts in regard to these industries. Unless some means can be devised to acquaint them with the real facts these industries are in constant danger of being wrecked by unreasonable demands on the part of the public. The last few years have shown how quickly unreasonable public demands have resulted in regulatory legislation.

Mr. Brookings, who is to direct the natural-resource work of the Chamber of Commerce of the United States, is a retired California lumberman. Throughout his business career, however, he has been interested in coal, oil, natural gas, waterpower and other natural resources. He has made a personal survey of the timber and power resources in both the United States and Canada.

High-Priced Goods Completely Liquidated Expect Rivival of Business and Prices

AFTER personal visits to a number of coal-consuming centers and a telegraphic survey of the situation among wholesalers, George H. Cushing, managing director of the American Wholesale Coal Association, has reached the following conclusions:

(1) The stocks of high-priced goods of all kinds have about been worked off. Manufacturers everywhere are buying raw material only after they have orders for the finished product, manufacturing the raw material into a finished product as quickly as possible, and are making shipments almost instantly. Everywhere there is a definite feeling that price liquidation has reached bottom on the present wage scale. Everywhere there is a feeling that business activity is starting to resume and there is an expectation of a price recovery.

(2) The stocks of coal in the hands of retail dealers are equal to November demands for at least two weeks and range in some places as high as three weeks. Almost uniformly public utilities have on hand a thirty-day supply of coal. The householders have taken coal into their own bins to the extent of between thirty and forty per cent of their winter's requirements. Stocks on hand by industrial plants range from practically nothing at all up to a supply equal to 100 days.

(3) There was no general belief that the railroad strike would occur. There was a little precautionary buying but not much. In one or two places there were slight price advances. Generally the market was dull.

(4) In Ohio, western West Virginia and eastern Kentucky there is already a shortage of cars. It is rather surprising to see that railroad loadings of all commodities have been for three weeks on the basis of 915,000 cars per week, which is close to what have been considered prosperous times.

Cure High Prices and Irregular Output by Storing Coal, Says Harry Taylor

IN INDORSING the statement made at Chicago by Director Smith of the U. S. Geological Survey in regard to leaks in the coal industry, Harry Taylor, former president of the National Coal Association, in a letter to Dr. Smith says among other things:

"You have covered that situation in a clear and concise manner and it is generally understood by operating men that the buyer of coal is often unwilling to recognize the invisible increase in cost caused by lack of running done and irregular distribution of work at mines. Again this is a matter the public can cure if we can ever arouse the public itself to interest in a more regular placing of orders throughout the twelve months of the year. I read the letter from President Harding to the Mining Congress in which he suggests storage. I believe that if the consuming public thoroughly understood the economic waste involved in the irregular distribution of coal and the saving that could be made in the country if the industry could function every month in the year it would give serious consideration to the storage of coal and its direct effect upon the cost of production."

The Weather Vane of Industry

News Notes Chronicling the Trend of Industrial Activities on Which Depends the Immediate and Future Market for Coal

FURTHER revival of business has occurred in the last few weeks, but the gains have not in any sense assumed the proportions of a boom, according to the *Guaranty Survey* for November. "In part the present volume of business reflects merely seasonal production and trade," the *Survey* continues, "but when allowance is made for this condition it appears that substantial progress is being made toward normal business activity, which should be realized if the foreign and domestic clouds on the horizon are cleared.

"The tendency of group prices to resume more nearly their pre-war relative positions represents an approach to conditions contributing to the revival of general business activity.

"It is too early to predict with assurance a forthcoming stabilization of prices at approximately present levels, but the fact that in recent months in many other countries as well as in the United States there has been a noticeable tendency of general prices either to rise slightly or to remain comparatively unchanged supports the belief that any further changes in the immediate future should be comparatively slow.

"The country's daily pig iron output, which in August for the first time since October, 1920, showed an increase compared with the production of the previous month, made a further gain in September. The increase in the tonnage of unfilled orders of the Steel Corporation, as reported for Sept. 30, representing the first monthly increase since July, 1920, is further evidence of definitely better business for the iron and steel industry. Contracts awarded in September reflect substantial gains in activity in the building industry.

"The early reduction of railway rates is presaged by the steps in this direction already taken by the Executive Committee of the Association of Railway Executives and the Interstate Commerce Commission. Apparently no horizontal percentage reduction is contemplated, but rather such readjustments downward of particular rates as will substantially reduce the average. The immediate effect of reductions on the earnings of the roads would doubtless be adverse. What may reasonably be expected is that the stimulus to business in general resulting from reduced transportation costs, especially for basic commodities and foodstuffs, would in the long run so increase the volume of tonnage carried as to counterbalance the immediate loss of revenue."

Freight Loadings Gain 56,258 Cars

Loading of revenue freight on American railroads during the week ended Oct. 22 totaled 962,292 cars or 56,258 cars more than during the previous week, according to reports by the Car Service Division of the American Railway Association. This was within 46,526 cars or 96 per cent of the number loaded during the corresponding week in 1920 and only 14,759 cars less than were loaded during the corresponding week in 1919. Comparisons show that the loading for the week was the largest since Oct. 30, 1920. The gain over the week before was due principally to the increased movement of coal and also merchandise and miscellaneous freight, which includes manufactured products, although increases were reported in the loading of all commodities.

The total number of freight cars idle on railroads on Oct. 23 was 294,404, or a reduction of 21,973 as compared with the total on Oct. 15. The reduction was due almost entirely to increased demand for coal cars. Tabulations showed 49,908 surplus coal cars in good repair on Oct. 23, compared with 68,383 on Oct. 15, or a reduction within that time of 18,475, while there were 26,624 surplus box cars immediately available, a reduction of 858 compared with the total at the middle of the month.

Army of Idle Is Dwindling

That the army of idle men and women is gradually dwindling is shown by government reports, which also indicate less labor unrest than a month ago. Secretary of Commerce Hoover, directing the unemployment canvass, expresses confidence that an actual survey now shown by government reports, created by the recent conference, will show the situation less acute than at first suspected. Mr. Hoover believes the number of men in need of jobs is greatly below all previous estimates.

Employs 2,000 More Needleworkers

M. E. Smith & Co., of Omaha, manufacturers of men's and women's garments, with factories in a dozen Western cities, are so confident of returning business that on Nov. 2 they ordered all their factories to resume work with full forces and to employ 2,000 additional sewing women. The Indianapolis factory was ordered to place 500 women at work immediately and the Omaha factory will add another 500.

Steel Mill Resumes Operations

The Parkersburg Iron & Steel Co., Parkersburg, W. Va., has resumed operations after a curtailment of several months according to the *Iron Age*. Employment will be given to about 500 men.

44 Tin Plate Plants Reopen

Officials of the McKeesport Tin Plate Co. announced that the forty-four mills of the plant would be operated full time beginning Sunday, Oct. 31, and that there was assurance of continuous operation until Jan. 1, 1922. For the past few months the plant has been operated only in part, but with resumption in full about 3,000 men will be employed.

So. Pac. Places Big Rail Order

One of the largest orders for steel rails placed in many months was announced Oct. 29 by the Southern Pacific R. R. The order was for 44,600 tons of rails for 1922 delivery, placed with the Tennessee Coal & Iron Co., a subsidiary of the United States Steel Corporation. The contract was said to bring the total of orders for the Steel Corporation, since it reduced the price of rails $7 a ton to $40 on Oct. 22, to approximately 125,000 tons. The normal requirements of steel rails for the carriers of the United States is approximately 2,000,000 tons annually. During recent years the roads have been economizing in the purchase of rails, and as a result are far behind in their normal requirements. Consequently steel men look for an unusual demand for rails next year.

Geological Survey Issues Report on Proposed Superpower System

THE U. S. Geological Survey has just issued a report on the proposed superpower system for the region between Boston and Washington, under the title Professional Paper 123. An appropriation of $125,000 was made by Congress for the purpose of the survey, and $26,000 additional was contributed by utilities and industries in the superpower zone. The investigation was begun July 1, 1920, and was completed within a year.

The superpower project makes its appeal to the general public as a means of saving coal and of increasing the productivity of labor. The nation's business demands greater and cheaper production and better and cheaper transportation, the report states, and the electrification of industries and railroads is the answer to that demand. To connect all the large generating plants—both steam and water power—in one great system means more and cheaper electric current, because each ton of coal will be used to the best advantage and our idle rivers will be made to turn wheels, especially in the regions farthest removed from the coal fields.

Looking ahead to 1930, with the increased demand for power that can then be reasonably expected, the total coal saved annually under the unified system, it is stated, will be fifty million tons. Under motor operation the industries could save $190,000,000 annually in their power bill and could make a greater output of product.

The North Atlantic coast region, to which it is proposed to supply more and cheaper electric current, was selected for this study because its industries and railroads have the maximum requirements for power. The superpower zone has relatively small hydro-electric resources and maximum industrial-power requirements. Fortunately some of the best coal deposits in the country lie near this great industrial territory, and a prime economic purpose should be so to conjoin the hydro-electric supply of power to the steam-electric supply as to produce a maximum of energy for a minimum investment of capital and a minimum operating expense, and at the same time to conserve the rapidly disappearing cheap fuels of the Appalachian coal fields.

Economy of Investment and Operation Sought

The superpower system comprehends also a plan of power production that includes the generation of electricity by steam at tidewater and on inland waters where a sufficient quantity of condensing water can be obtained, and also the utilization of all hydro-electric power that may be economically obtainable from rivers within the zone or within transmission distance of it. The electric power so generated will be co-ordinated through a system of interconnected transmission lines, the potentials of which will be on the order of 220,000 and 110,000 volts.

Economy of investment and economy of operation are the two ends sought by this plan, the outstanding feature of which is a great network of inter-connecting transmission lines which makes a system out of many units. This transmission network and its substations would require $104,000,000 by 1930, and the total investment cost of the system the same year is given by the engineers as $1,109,564,000, of which $693,218,000 would be new money, for more than $400,000,000 worth of existing steam-electric and hydro-electric plants are retained in service.

The question of railroad electrification must be decided according to density of traffic, the report states, and so it is that of the 36,000 miles of main line, yards and sidings in this superpower zone, only about 19,000 miles could be profitably electrified. This electrification would cost nearly half a billion dollars, but it would save from 11 to 19 per cent on the investment, or an average of 14 per cent. Electrification is the next step in railroad expansion absolutely necessary to increase both the capacity and the efficiency of our transportation system. Incidentally, the annual saving of 9,000,000 tons of coal by the railroads would greatly increase the available car supply.

In his letter to the President, Secretary Fall says: "Had the superpower project outlined in this report been in operation in 1919 it is believed that twenty-five million tons of coal could have been saved, and with the rapid growth expected in the present decade the saving possible in 1930 by the interconnected electrification of industries and railroads would be fifty million tons."

Will Sell Coal Lands of Reading for Taxes

BECAUSE Dauphin County, Pennsylvania, increased the assessments on the coal lands of the Philadelphia & Reading Coal & Iron Co. 357 per cent that company refused to pay the land taxes levied in 1918 in Rush, East Hanover and Middle Paxton townships. The county commissioners plan to offer the coal land for sale at the next County Treasurer's sale to be held in August, 1922. The commissioners have taken the same stand regarding a small tract of coal land assessed at $32,288 in the names of J. J. Dull and W. Hoff.

The coal company has paid taxes on the valuations existing prior to the establishment of the increased valuations at the last triennial assessment and these payments have been credited from year to year as on account.

Prior to 1918 the valuation assessments on the Dauphin County anthracite lands of the Reading ran about $300,000, but the new valuation placed the holdings of the company at $1,372,755. The tax on the increase having been returned as unpaid, the commissioners hold that this action acts as a lien against the property. The commissioners have not acted during the past few years because of a similar situation in Lebanon County, where the assessment disputes have been carried to the courts. The decisions in those cases, however, have not been rendered.

The assessments against the several coal tracts owned by the Reading Company, as made by W. K. Sekol, mining engineer employed by the commissioners, are as follows: Rush Township, 5,957 acres of land, of which 871 acres contain coal, valuation, $276,028; Middle Paxton Township, 2,710 acres of land, 1,389 acres of coal, valuation, $391,386; East Hanover Township, 4,570 acres of land, 1,067 acres of coal, valuation, $705,340.

URGING PATRONS TO OBTAIN their supplies of winter coal at once, S. Ennes, general manager of the Wheeling & Lake Erie Railroad Co., has issued an appeal to residents of towns along the road to order their fuel at once. He said the railroads have plenty of cars with which to handle the coal and therefore are in a position to give immediate service which may not be possible if a sudden cold snap brings an excessive demand. The notice says: "A careful study of the domestic coal situation develops the fact that a very small percentage of the coal necessary to meet with the requirements of the coal consumers has been purchased; hence it is a self-evident fact that the first appearance of cold weather will result in there being a rush to secure fuel, which undoubtedly, will cause a shortage of such fuel for immediate use, thereby causing no little suffering on account of lack of fuel for heating purposes."

SUBCONTRACTING ADOPTED IN MEXICAN MINES.—Work has been resumed in the San Juan mine of the American Smelting & Refining Co., near Durango, Mexico, following a settlement between officials of the plant and representatives of the union miners over wage matters. The miners went on strike last May, when an attempt was made to reduce wages, and till recently did not return. The settlement is in the form of a contract, with the contractors hiring and paying their own help and delivering coal to the headings, from which place the smelter employees will move it through a tunnel and over a tramway to the tipple. About thirty men are affected.

ACCORDING TO STATISTICS just made public by the Interstate Commerce Commission, the consumption of coal in road service on 165 steam roads, exclusive of switching and terminal companies, in August, 1921, was 2,479,005 net tons, compared with 2,768,783 in August, 1920. The same roads in the eight months ended with August this year consumed 20,538,315 net tons, compared with 22,299,001 tons in the same period of 1920.

Injunction Upset Operators and Union; Strike Not Likely To Be Successful

THERE is ample evidence in Washington that operators in the unionized coal fields are not going to find fault with the non-union operators for applying for the injunction which Judge Anderson granted. Most operators in the unionized fields always have been opposed to the collection of the union dues, and the belief that the practice is illegal has been growing. There has been general realization of the fact that recognition of the check-off by the President of the United States, by the Fuel Administrator and other officials has in no way made it legal. Judge Anderson's pronouncement temporarily placed all operators, including those outside the immediate jurisdiction of his court, in an embarrassing position.

The position of the unions threatened to be even more embarrassing. They could not surrender the check-off without a blow. At the same time they were in the worst possible position to be called upon to use the strike weapon. It would not be a strike against the operators; it would be a strike against Judge Anderson and the judicial authority of the nation. A strike at this time would not affect the anthracite region and it is known that the aid of the anthracite workers was being relied upon strongly in the plans for the strike next spring.

It is believed by coal specialists in Washington that while a strike could be made almost completely effective in Illinois, Indiana and Ohio, there would be much difficulty in making it effective in Pennsylvania, West Virginia, Kentucky, Tennessee and Alabama. In the unionized sections of those states it is believed that the men would go out during the initial stage of the strike, but would not be likely to stay out. This belief is based largely on the fact that miners generally are not in a good position to strike after a long period of slack work, and as a result it is believed that there would be a gradual resumption of work in the union fields in those states where the union is weakest. It is generally admitted that were a general strike to be precipitated at this time the chances would be very much in favor of the operators coming out on top.

The statement is heard frequently that the operators would welcome a strike under conditions such as existed after the pronouncement of Judge Anderson's opinion. This is not the case, judging from the opinions which have come into Washington from numerous operators.

There is evidence that many miners would prefer to have more work at a smaller wage with the resulting increase in the aggregate of income. That advantage to the operator, however, would not compensate for the losses he would be forced to sustain by the strike and the danger he would incur of bringing down regulatory legislation upon the industry. It is thoroughly understood that a strike at this time, on the threshold of winter, would bring with it powerful demands for relief via the route of Federal legislation. The situation so far as the public is concerned has been measurably improved by the large additions made to stocks since the announcement of the threat to call a railroad strike. Incidentally the Indianapolis injunction came just at the time to prevent a material slump in coal production. The loadings the first of last week indicate that a rapid decline was about to set in but production seems to have recovered sharply during the latter part of the week ended Nov. 5.

There is a feeling in many quarters outside of labor circles that a court injunction is no way to settle labor disputes. This process is cumbersome and slow and many hold it to be an entirely impracticable remedy for an acute situation requiring prompt action. Secretary Hoover points to this as only another indication that something fundamental must be done in the matter of industrial relations. He has pointed out the utter fallibility of attempting to penalize strikers in a statutory manner. It is his opinion that a type of tribunal can be evolved to pass on matters of industrial relations and that public opinion can be relied upon to insist upon compliance with the mandates of its tribunal.

Operators recognize that the union cannot be killed in the Central Competitive Field. The check-off is not a requisite for its maintenance. An example is had in the anthracite region, which is entirely unionized and has no check-off. It is obvious, however, that the loss of the check-off in the outlying fields would be a serious handicap to the progress of unionization.

Hampton Roads Shippers Ask Readjustment Of N. & W. Demurrage Charges

TWENTY-ONE coal shippers doing business at Hampton Roads have instituted proceedings before the Interstate Commerce Commission seeking readjustment of demurrage charges on the Norfolk & Western Ry. and a recovery of excess payments they assert have been already made to the amount of approximately $500,000. Construction of tariffs covering demurrage charges on coal shipped to the Lamberts Point Coal Exchange by members of that institution is involved in the proceedings. The bill was filed with the commission by K. K. Gartner, of Washington, attorney for the shippers, and the proceedings are the result of a conference of coal shippers held in Norfolk early in October at which a committee headed by W. W. Houston, of Norfolk, was appointed to institute the action.

The proceedings ask an investigation to determine the basis of the present demurrage charges and to construe the tariffs to ascertain if they are being applied properly. If the construction placed on the tariffs by the railroads is correct, shippers ask to have it amended so as to allow credit for cars dumped in advance of the expiration of five days' free time allowed before demurrage is assessed. The bill also seeks reparation for excess payments and relief from payment of outstanding bills in excess of what the complainants feel the charges should be.

The contention of the shippers is set forth in a memorandum prepared at the Norfolk conference in October. It points out that the Lamberts Point Coal Exchange is the real consignee of all coal shipped to its tidewater pools and that demurrage against members of the exchange must be computed collectively and assessed proportionately. The memorandum says that the Norfolk & Western tariff provides for a computation of demurrage on the basis of car detention and assessment against individual members but that it has in error computed the charges on a basis of credits in different pools from the date of car arrivals and not upon the actual detention of cars. Even should car detention be the proper basis of demurrage, the memorandum says, members of the exchange should be allowed credit for cars dumped before the expiration of free time.

The coal companies joining in the proceedings before the commission are the Smokeless Fuel Co., Charleston, W. Va.; Castner, Curran & Bullitt, New York; Cosgrove & Wynkoop Co., New York; Dexter & Carpenter Co., New York; Emmons Coal Mining Co., Philadelphia; Fort Dearborn Coal & Export Co., Norfolk; Hasler & Co., Norfolk; Jewett, Bigelow & Brooks, Detroit; Kentenia Coal Co., Cincinnati; Lake & Export Coal Corporation, Huntington, W. Va.; W. A. Marshall & Co., New York; Matlack Coal & Iron Corporation, New York; Raleigh Smokeless Fuel Co., Beckley, W. Va.; C. H. Sprague & Son Co., Boston; Virginia Smokeless Coal Co., Tazewell; George E. Warren Corporation, Boston; Weston Dodson & Co., Bethlehem, Pa., and West Virginia Coal Co., Richmond.

Senate Defeats Smoot Sales Tax Amendments

BY votes of 43 to 25 and 46 to 25 the Senate defeated the Smoot sales tax amendments to the tax bill, the former proposing a "mannfacturers' and producers' tax of 1 per cent upon every commodity manufactured or produced, when sold, leased or licensed for consumption or use without further process of manufacture," and the latter a business sales tax of one-half per cent on sales of goods, wares or merchandise manufactured or purchased by such person for sale, the production of coal to constitute manufacture.

Senator Lenroot, of Wisconsin, was the principal opponent of the sales tax, directing his remarks mainly to the tax on coal. He said purchasers would be compelled to pay it.

September Bituminous Production by States, As Estimated by Geological Survey

ORIGIN, by states, of the 35,127,000 tons of soft coal produced in the month of September is given in the subjoined table. The figures are estimates by the Geological Survey based upon records of cars loaded by the principal coal-carrying roads, and checked against what limited statistics of current mine production are available from state and local sources. While the estimates of total production are shown by experience to be within 2 per cent of correct, the state estimates are subject to a much larger margin of error. The principal obstacle to accuracy in the preparation of these estimates is the necessity for arbitrarily apportioning between states the tonnage of roads originating coal in more than one state.

ESTIMATED PRODUCTION OF SOFT COAL, BY STATES, JULY TO SEPTEMBER, 1921

(In Net Tons)

	July	August	September	Year to Sept. 30
Alabama	870,000	1,005,000	1,045,000	9,081,000
Arkansas	147,000	157,000	152,000	1,236,000
Colorado	*663,000	777,000	862,000	6,586,000
Illinois	4,841,000	6,196,000	6,325,000	49,395,000
Indiana	1,360,000	1,720,000	1,750,000	14,722,000
Iowa	354,000	456,000	483,000	4,073,000
Kansas	396,000	426,000	433,000	3,69,000
Kentucky	2,311,000	2,562,000	2,601,000	21,371,000
Maryland	158,000	162,000	157,000	1,700,000
Michigan	77,000	102,000	94,000	805,000
Missouri	319,000	332,000	350,000	2,988,000
Montana	226,000	307,000	351,000	2,327,000
New Mexico	192,000	189,000	188,000	1,783,000
North Dakota	35,000	50,000	63,000	411,000
Ohio	2,615,000	2,868,000	2,715,000	23,390,000
Oklahoma	198,000	235,000	221,000	1,772,000
Pennsylvania	*8,175,000	9,158,000	9,161,000	81,802,000
Tennessee	330,000	387,000	395,000	3,364,000
Texas	96,000	84,000	74,000	780,000
Utah	267,000	412,000	442,000	2,850,000
Virginia	385,000	389,000	445,000	3,727,000
Washington	172,000	191,000	231,000	1,894,000
West Virginia	5,659,000	5,654,000	5,796,000	51,104,000
Wyoming	529,000	709,000	784,000	5,423,000
Other States†	10,000	10,000	9,000	89,000
Total bituminous	30,385,000	34,538,000	35,127,000	296,342,000

* Revised from last report. † Includes Alaska, California, Georgia, Idaho North Carolina, Oregon and South Dakota.

PRODUCTION OF SOFT COAL, BY GROUPS OF STATES, 1919-1921

(In net tons)

Region	First Nine Months of 1921	Year 1921 at Same Rate as First Nine Months	1920	1919
Northeast (a)	176,835,000	235,780,000	331,510,000	300,420,275
Southern Appalachian (b)	12,482,000	16,643,000	23,500,000	20,803,263
Eastern Interior (c)	71,187,000	94,916,000	130,800,000	90,407,132
Western Interior (d)	14,519,000	19,359,000	29,930,000	21,741,003
Mountain States and Northwest (e)	21,286,000	28,381,000	40,680,000	32,381,012
Total (f)	296,309,000	395,079,000	556.420,000	465.752,685

(a) Michigan, Pennsylvania, Ohio, West Virginia, Maryland, Eastern Kentucky, and Virginia. (b) Alabama, Georgia, and Tennessee. (c) Illinois, Indiana, and Western Kentucky. (d) Iowa, Kansas, Missouri, Oklahoma, Arkansas and Texas. (e) Colorado, New Mexico, Utah, Wyoming, Montana, North Dakota, and Washington. (f) Alaska, California, Idaho, North Carolina, Oregon, and South Dakota not included.

Two Thousand Gather at Institute Banquet

ON THURSDAY evening, Oct. 27, the Hazleton Mining Institute held its annual banquet in the girls' dining room of the Duplan Silk Mills of the city of Hazleton, Pa. It was probably one of the largest gatherings of its kind ever held in the anthracite fields. Places were set for 1,700 men and fully three hundred had to wait until the others were served. Men were present who in industrial life filled all positions from president to door boy. All nationalities in the anthracite field were represented. Many could hardly understand English.

Owing to the sickness of John W. Crooks, president of the institute, Robert A. Evans, the new superintendent of the Hazleton division of the Lehigh Valley Coal Co., presided at the banquet. The invocation was made by the Rev. John Harvey.

Following the dinner Mr. Evans acted as toastmaster and introduced the speaker of the evening. Mr. Evans in his introductory remarks made some interesting statements in relation to the institute. He said that there were more than 2,400 members, comprising not only the men who conceived the plans of mining but also the men who cut and loaded the coal. At the meeting of the institute on Dec. 12, 1908, only twenty-nine men were present. At the banquet in 1911 425 men attended, whereas on this occasion 2,000 men were present of the 2,400 who were enrolled.

Mr. Evans added that the larger and cleaner beds of coal were becoming rapidly exhausted and that they had to turn to the thinner and dirtier beds. Pumping lifts were higher and the amount of water raised was greater, transportation was over greater distances, and coal had to be prepared more carefully, as the market was more exacting. No longer, therefore, can the officials in selecting foremen choose men promiscuously from the body of the employees. The mine boss must know mining and have a degree of education. To supply this was the purpose of the institute. He spoke of the classes provided and of the lectures that were given at the regular meetings of the institute.

At the conclusion of his talk he introduced John Dennis Mahoney, of Philadelphia, who spoke of democracy and then introduced Major Victor Bruce Grant, formerly of the English army and now a correspondent of the Associated Press. The banquet was ended with the singing of "The Star Spangled Banner."

Hollenback Shaft Catches Fire

A DISASTROUS fire occurred at the Hollenback colliery of the Lehigh & Wilkes-Barre Coal Co. on Oct. 29, the cause of which is so far unknown. The fire apparently started in the shaft and is under control. For a while the flames shot out of the shaft to a height of 75 ft. The fire still continues at all the level landings. The breaker is built adjoining the shaft and if it had not been for the firemen of the city of Wilkes-Barre, where the shaft is located, and the protection afforded by a sheathing of iron, the breaker could not have been saved. The shaft timbers are burned down to the collar and it would appear as if they will all have to be replaced. The shaft has four compartments for hoisting and one for pumping.

September Coal-Mine Fatalities Reduced 45, or 0.06 Per Million Tons

ACCORDING to reports received by the U. S. Bureau of Mines from the various state mine inspectors, 152 men were killed during September in and about the coal mines of the country, as compared with 197 killed in the corresponding month of 1920. The 1921 figures show a decrease of 45 fatalities, or about 23 per cent, from the record of the same month of last year. Based upon an estimated output of 42,229,000 net tons in September, 1921, the fatality rate is 3.60 per million tons produced. The mortality rate during September last year was 3.66 and the production of coal was 53,810,000 net tons. The average number of lives lost during September of each year from 1913 to 1920 has been 189. The production of coal has averaged 51,886,000 tons, showing a fatality rate of 3.64 per million tons as representative of the month of September for the past eight years.

During the first nine months of the present year 1,455 men were killed by accidents at coal mines, against 1,686 killed during the corresponding months of 1920, a decrease of 231 fatalities, or 14 per cent. These figures represent a fatality rate of 4.01 per million tons mined in 1921 and 3.56 per million tons mined in 1920.

Of the total of 152 fatalities during September, 30 occurred at the bituminous coal mines in Pennsylvania, a decrease of 115 from September a year ago; 25 in West Virginia, a decrease of 6; 14 in Illinois, a reduction of 3; 6 in Kentucky, a reduction of 8; 5 in Ohio, a reduction of 4; 4 in Indiana, a reduction of 8; 5 in Ohio, a reduction of 13; 5 in Alabama, a reduction of 4; 3 in Indiana, a reduction of 12. At the anthracite mines in Pennsylvania, 41 men were killed, as against 20 during September of last year.

THE LABORER'S HIRE is not always determined by the laborer's ire.—*Columbia Record.*

THE INDUSTRIAL UNREST doesn't impede our progress nearly so much as the industrial rest.—*Columbia Record.*

Court of Appeals Temporarily Lifts Anderson Injunction Against Check-Off; Strike Threat Delayed

CONSEQUENT on a decision of the Federal Court of Appeals at Chicago which suspended the injunction issued at Indianapolis by Judge A. B. Anderson, forbidding the check-off, the general strike of coal-mine workers which seemed imminent earlier in the week is averted. It seems likely that no trouble will be experienced anywhere, although the operators, feeling, from testimony recently given, that the check-off is a thing of infamy which no good citizen should pay, are anxious to cease to deduct it from the wages of their men. If the check-off is used to buy rifles to convert non-union men into union men by murder and maiming it is not the part of an operator even to act under compulsion as a go-between in such a transaction. This sentiment makes it difficult for the operators to understand the action of the court Nov. 14 in Chicago and to wonder whether on Nov. 16, when that action comes under review, Judge Anderson will not be sustained.

However, Indiana operators will re-establish the check-off, the United Mine Workers of America having been so notified by P. H. Penna, secretary-treasurer of the Indiana Bituminous Coal Operators Association. William Mitch, who occupies the same position with District No. 11 (the State of Indiana), says that all the men will return to work.

Miners Work Pending Decision of Court of Appeals

In the other districts the tendency is to work while awaiting the final decision of the Court of Appeals. Both operators and men seem firmly convinced that it is best to find out how the ground stands before precipitating a struggle. What that decision will be it is hard to forecast. William A. Glasgow, of Philadelphia, and Henry Warum, of Indianapolis, who appeared for the union before the Court of Appeals, which included Judges Baker, Alshuler and Evans, laid stress on the fact that the injunction violated a "legal contract" and declared that neither he, Mr. Glasgow nor Mr. Lewis could undertake for the union that there would be no more unionizing in West Virginia. Neither of these arguments seems likely to have much influence with the court, for the contract has yet to be proved legal, and if Messrs. Glasgow and Lewis cannot prevent a violation of the law, then the court must. The Court of Appeals in making its decision did not have the benefit of copies of the evidence given before Judge Anderson or of the affidavits in relation to the matter at issue. It has ordered that the clerk of the District Court at Indianapolis forward these documents to Chicago.

Passing in review the events of the week: The injunction of Judge Anderson was followed by a telegram sent out from the headquarters of the United Mine Workers at Indianapolis, Nov. 1. In this dispatch, which was addressed to union officials in Pennsylvania, Ohio, West Virginia, Illinois, Indiana, Missouri, Kentucky, Michigan, Iowa, Kansas, Oklahoma, Arkansas, Texas, Wyoming, Montana and Washington, sixteen states in all, the international union leaders referred to the fact, if it be indeed a fact, that the contract made was in accord with the award of the U. S. Bituminous Coal Commission. This appeal to Caesar, however, is quite specious, for it is not true that the mine workers are employed under the contract written by that commission. No sooner was it made than the mine workers broke it. Another contract was made with large wage concessions. This contract was arranged to terminate at the same time as the commission agreement, namely, March 31, 1922. It is still in full force and effect, not by virtue of the commission's ruling, which it abundantly violates, but by reason of the signatures of the operators.

The commision said: "The terms, conditions and provisions, mining rates and wage schedules in effect on Oct. 31, 1919, in what is known as the Washington Agreement, dated Oct. 6, 1917, and in the agreement" which preceded it should continue in effect subject to certain wage and other modifications. The chek-off was not among the terms modified. It undoubtedly was permitted to remain among the conditions of the agreement, and it was not surrendered in the later contract. But the majority report of the commission did not speak favorably of it and actually recommended that a scale committee be appointed to consider among other matters its discontinuance. The union was not pleased with the section of the award and quietly ignored it. As a result no committee was appointed and the check-off continued to flourish. Nothing could be more hollow than the sanctimonious professions made by union officials in the preamble of the telegram calling on the districts to take appropriate action against Judge Anderson's decision. They are untruthful when they say that the commission's award rules today as also when they add that the same body approved the check-off.

The United Mine Workers' telegram concludes with these mysterious words: "Any abrogation or setting aside of any part or section of this agreement, including the section providing for the checking-off for the United Mine Workers of America of union dues and assessments, cannot be regarded as other than a violation of the agreement and should be treated accordingly by the district officers and local unions within your jurisdictions."

This telegraphed notice from union headquarters was somewhat generally regarded by union men, the operators and the public as an adroit and dishonest "passing of the buck," for Lewis, Murray and Green, from whom it emanated, did not explain the telegram even when asked point-blank by the correspondents. What, it was asked, was the meaning of the expression "cannot be regarded as other than a violation of the agreement, and should be treated accordingly."?

Farrington Asks Lewis to Interpret Message

Frank Farrington, president of the Illinois district and one of Lewis's foremost antagonists, called on Mr. Lewis in a telegram to interpret the document. Did the international officials want the district presidents to call a strike if the operators in their districts refused to collect the check-off? Would they be repudiated if they did? Lewis replied as evasively a sever, saying that the operators who abrogated the existing contract impaired the validity of the instrument, which statement, indeed, cleared up none of Farrington's problems.

Meanwhile men were striking. They had anticipated Judge Anderson's injunction and were ready. The day after it was written and the day before it came into effect five mines in Indiana employing more than 1,500 men were reported closed. At Floodwood, Ohio, at mine No. 26 of the New York Coal Co., 300 went out without waiting for the statement from union headquarters at Indianapolis. While Lewis, Murray and Green were busy with counsel these men struck. Not until evening of that day was the shilly-shally word from headquarters with its enigmatic language put over the wires.

Samuel Gompers, president of the American Federation of Labor, on hearing of Judge Anderson's decision is reported to have declared him a "slave driver," saying that such actions "are making it impossible for us to have a law-abiding patriotic and rational labor organization of American citizens"—as much as to say that if the union could not compel the operators to collect union dues, revolution and violence were excusable.

Questions naturally arose whether Judge Anderson's decision was effective outside Indiana, and the Illinois operators inquired of their counsel whether they should obey the injunction of the Federal judge or should regard themselves bound by that of Judge Charles H. Miller, of Franklin County, Illinois, which prohibited them from interfering with the check-off. To Colorado, Iowa and Oklahoma operators it seemed quite clear that the injunction did not refer to them and consequently there was no talk of abandoning the check-off and it will be collected as usual.

The Indiana operators, not being troubled by a conflict of

injunctions and being clearly subject to Judge Anderson's decision, early undertook to be govered by the injunction. As a result only sixteen mines were running in that state on Nov. 2. Decision was not easy for the Illinois operators. They put off the matter till Nov. 10, planning a meeting on that date in Chicago.

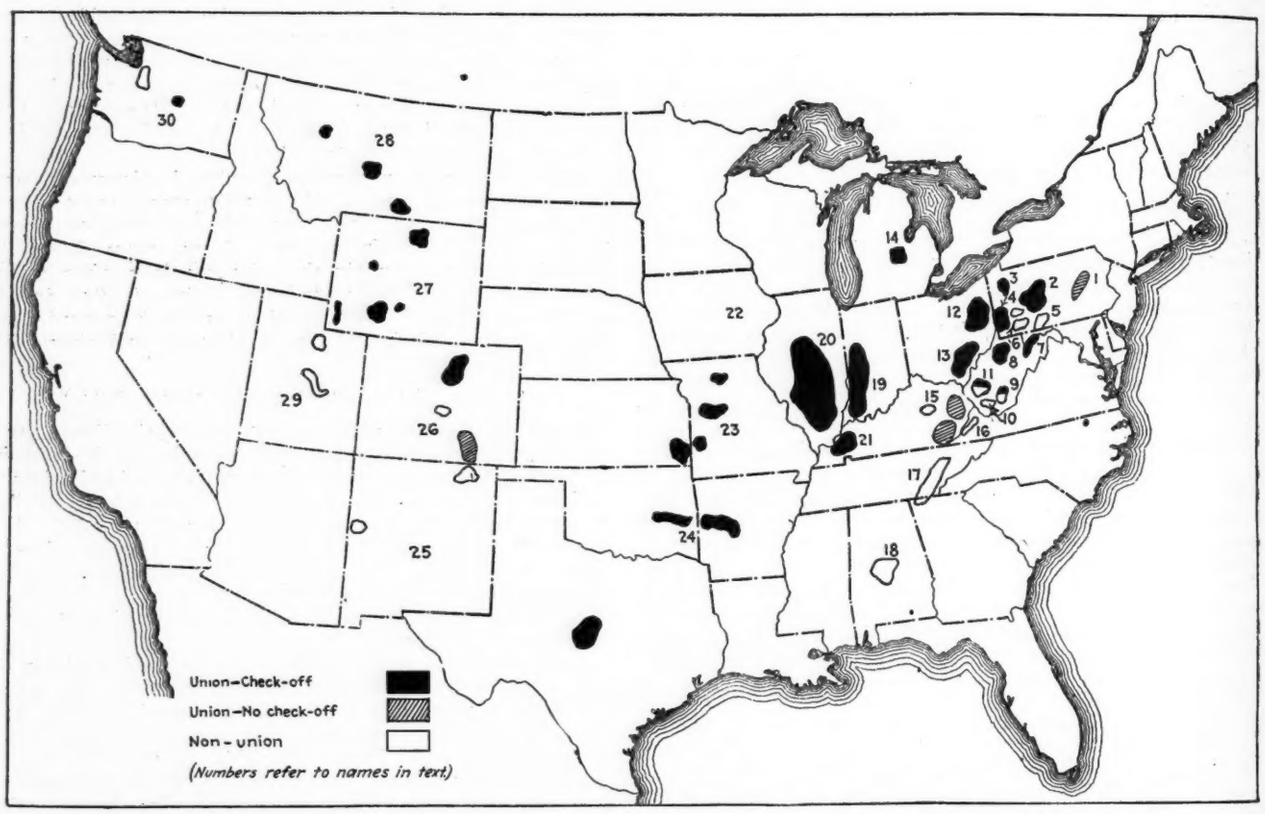
The Pittsburgh operators seemed more desirous than all others to rid themselves of the check-off, which was at once a conspiracy in restraint of trade and a contribution to violence in West Virginia. As early as Nov. 2 they decided to obey the injunction, and late on Nov. 4 they, through R. W. Gardner, Commissioner of the Pittsburgh Coal Producers Association, notified Robert R. Gibbons, president of District No. 5, that they would not longer collect the check-off. As a result the district executive board decided at a special meeting to call a strike at midnight, Monday, Nov. 7, and even when Gibbons heard that the Federal Court of Appeals failed to sustain Judge Anderson he was not ready to withdraw his order. Would the Pittsburgh operators reverse themselves as readily as had the courts?

In central Pennsylvania the operators of District No. 2 met on Nov. 4 in Altoona and passed a resolution abolishing the check-off. This was as follows:

"In view of the decision of Judge Anderson in the case of the Borderland Coal Corporation against the United Mine Workers of America, and in view of the evidence adduced in that case of the vicious misuse of the funds collected through the check-off system, which evidence established that such system is against the public interest, it is the sense of this meeting that the operators in this association immediately discontinue the collection of the check-off."

Another resolution declared that this would not affect the wage scale or any working agreement other than the check-off. The miners might still have checkweighmen and deductions would be made on the payroll for them; not from all the employees but only from those who had coal to be weighed, namely the miners, scrapers and loaders.

Ohio is not a unit. The south and north of the state have little in common. The Ohio operators in the southern part of the state met and decided they could not agree on common action at once, so they adjurned to meet Nov. 7. On Nov. 4 the coal operators of eastern Ohio—or should we not



COAL FIELDS OF UNITED STATES SHOWING CHECK-OFF, NO CHECK-OFF AND NON-UNION FIELDS

Those fields which are marked in solid black are likely to suspend work if the check-off is declared illegal by the Federal Court of Appeals on further review. There will be strikes in any event if the districts which have suspended the check-off persist in their decision, but that is not thought likely.

UNION FIELDS COLLECTING CHECK-OFF

No. on Map	Field	Tons Produced in 1918	Approximate Number of Men Employed in 1918
2	Central Pennsylvania	61,629,000	72,500
3	Northern Pennsylvania	8,051,000	10,000
4	Pittsburgh	51,554,000	45,600
7	Cumberland-Piedmont	4,267,000	6,000
8	Fairmont	20,104,000	20,000
9	New River	7,447,000	8,000
11	Kanawha	8,000,000	9,000
12	Eastern Ohio	30,287,000	27,500
13	Southern Ohio	15,768,000	18,000
14	Michigan	1,465,000	2,500
19	Indiana	30,679,000	30,300
20	Illinois	89,291,000	85,900
21	Western Kentucky	10,883,000	12,400
22	Iowa	8,192,000	13,300
23	Missouri and Kansas	13,229,000	20,200
24	Arkansas and Oklahoma	7,040,000	12,400
27	Wyoming	9,438,000	7,500
28	Montana	4,532,000	4,600
		381,856,000	406,700

UNION FIELDS NOT COLLECTING CHECK-OFF

No. on Map	Field	Tons Produced in 1918	Approximate Number of Men Employed in 1918
1	Anthracite	98,800,000	147,000
15	Eastern Kentucky	20,700,000	26,900
26	Colorado	12,400,000	14,500
		131,900,000	188,400

NON-UNION FIELDS

6	Connellsville, Westmoreland, Latrobe, Greensburg, Ligonier	53,400,000	35,900
5	Somerset	0,000,000	11,000
9	Winding Gulf	7,000,000	7,500
10	Pocahontas	23,100,000	15,100
11	Logan-Kenova Thacker	22,655,000	14,900
16	Virginia	10,300,000	11,000
18	Alabama	19,200,000	26,000
26	New Mexico	4,000,000	4,000
29	Utah	5,100,000	4,100
30	Washington	4,000,000	5,100
		105,255,000	135,600

rather say northern Ohio, for they operate toward the northern end of the field (the men who constitute the Pittsburgh Vein Operators' Association)—decided to abolish the check-off.

In the anthracite region there is no check-off and the excitement in which the other fields were thrown was not exhibited in that region. However, should there be a strike, these men, glutted with steady work and keen themselves for the check-off, would be apt to come out in sympathy with their bituminous confreres.

Perhaps it should be stated here that Judge Anderson after making his decision suspended its operation till the Borderland Coal Corporation, which applied for the process, could give bond in $1,000 for the indemnification of the defendants should the injunction be reversed. This bond was entered Nov. 2, when the process became of full force and effect.

In all there were about 28,000 men on strike in Indiana, Ohio and Illinois on Nov. 3. In the Hocking region six mines employing 2,000 men were idle. On that date at Centralia, Ill., several hundred men returned to work to await definite orders from the mine leaders, who here, as in all other sections and states, favored concerted action and were opposed to any attempt to strike till the operators of the state or section voted to discontinue the check-off. On Nov. 4 the Hocking men were going to work. Thus at the moment when the Federal Court in Chicago reversed the action of Judge Anderson, men were returning to work and other men were going out.

The maps and tables in this article exhibit the conditions obtaining in the field with relation to the check-off and the number of men likely to be affected if the dues and assessments thus known are declared to be in violation of the law. The check-off is collected in Illinois, Indiana, Ohio, Missouri, Kansas, Oklahoma, Arkansas, Texas, Wyoming and Montana, in Pennsylvania except in the anthracite, Westmoreland, Connellsville and Comerset fields; in West Virginia except in the Mingo, Logan, Pocahontas and part of the New River fields; in northwestern Kentucky and in the railroad mines in the State of Washington. There are exceptions in most of these fields but they are few.

Mine Workers to Test Constitutionality of Kansas Industrial Relations Court

A FORMER Iowa State Senator, John T. Clarkson, has been retained by the United Mine Workers of America to enter proceedings to test the constitutionality of the Kansas Industrial Relations Court law. He is well known as the counsel of the mine workers in Iowa. The manner of conducting the attack is left to him but a union mine worker probably will appear as plaintiff, alleging injury by reason of the application of the law. The litigation initiated by Alexander Howat and still pending is said not to raise the question of constitutonality.

On Nov. 5 the provisional officers of the union in Kansas, who have taken the places of Howat and Dorchy since their incarceration, warned the mine workers who were on strike against the imprisonment of these men that they must return to work before Nov. 15 or the charters of all the local unions where the strike continued would be suspended.

Commission Lets Colorado Fuel & Iron Co. Reduce Its Mine Workers' Wages

AFTER obtaining the consent of the representatives under the Employees' Representation Plan to a reduction in wages the Colorado Fuel & Iron Co. on Sept. 1 lowered its wages approximately 30 per cent in Huerfano and Las Animas counties so as to meet the competition of other steel manufacturers who were obtaining their fuel at a lower wage rate. The State Industrial Commission ordered the wage restored till it had made an investigation.

On Nov. 5 the commission suspended its temporary order, saying that an agreement had been made and that the reduction squared with that understanding. In making its award the commission did not enter into the fairness of the wage reduction. The members of the commission declared that the mine workers would not be violating the state industrial law if they went on strike against the decrease in pay, for the order is not mandatory but merely records the findings of the court. The decision specified that the reduced wage could be put in effect legally only at mines where this "agreement had been reached between the company and its employees," and listed eleven mines in the two counties mentioned as coming under the provisions.

The United Mine Workers of America through John P. McLennon, president of district 15, stated that union employees would strike if an attempt was made to reduce their wages. When the reduction was first attempted in September several mines struck for ten days, returning to work only when the commisson interposed its restraining order. Any reductions in other mines can be made only after a 30-day investigation by the court.

N. C. A. Denied Permanent Injunction in Removal Case; Temporary Stay Extended

JUSTICE HITZ of the Supreme Court of the District of Columbia has refused to grant the permanent injunction sought by the National Coal Association to restrain United States officials from requiring the presence of certain officials of the association in court at Indianapolis. The permanent injunction was refused on the ground that it would interfere with a criminal action. At the same time Justice Hitz dismissed the temporary injunction but took up immediately the request of the National Coal Association for an extension of that injunction and it was granted. As a result officials of the National Coal Association may not be served with a summons until the matter has been passed upon by the Court of Appeals. A ruling by that tribunal will not be forthcoming for several months.

DIRECTORS OF THE NATIONAL COAL ASSOCIATION will meet Nov. 18 at the Gibson Hotel in Cincinnati. More than the usual amount of business has accumulated, due to the fact that this meeting has been deferred because of President Bradley's illness. Prior to the meeting of the directors Mr. Bradley expects to confer with Herbert Hoover, Secretary of Commerce. Meetings of the railroad relations, government relations, and other committees are scheduled to be held in Cincinnati the day before the directors' meeting. A wide range of subjects of interest to the coal industry will be discussed and an important report submitted on the export situation.

IN RESPONSE TO A recent suggestion of the Secretary of Commerce the American Mining Congress has appointed a coal committee, one of three mining committees, to cooperate with the department in improvement of the mining industry. The coal committee consists of President J. G. Bradley of the National Coal Association; S. D. Warriner, of the Lehigh Coal & Navigation Co., Philadelphia; Thomas H. Watkins, of the Pennsylvania Coal & Coke Corporation, New York; Charles S. Keith, Central Coal & Coke Co., Kansas City, Mo., and Albert J. Nason, Nason Coal Co., Chicago. The mining committees will meet Secretary Hoover Nov. 14.

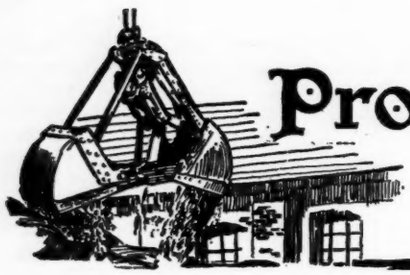
THE DEPARTMENT OF LABOR is gathering statistics concerning coal wages for use in adjusting wage agreements next spring. For a month it has had field agents at work, co-operation being extended by the operators in giving information covering average hourly earnings from a representative number of mines, union and non-union.

JUDGE ANDERSON WANTS to give the check-off system a check out.—*New York Sun.*

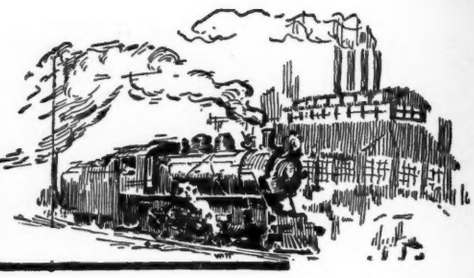
AS BUSINESS SEES IT, highways of prosperity can be reached only through buy-ways.—*Norfolk Virginia-Pilot.*

SUCCESS IS STILL OPERATED on the self-service plan.—*Kingston Whig.*

BETWEEN THE DEMANDS of the unions and the Union, employers are up against it.—*Columbia Record.*



Production and the Market



Weekly Review

THE market has settled down to the price basis prevailing before the flurry caused by the erstwhile rail-strike threat. Quotations are being made over a delivery period of thirty days and longer, indicating unexpected confidence in the stability of the market in the face of the check-off controversy. *Coal Age* index of spot bituminous prices stands at 91 as of Nov. 7—unchanged from Oct. 31.

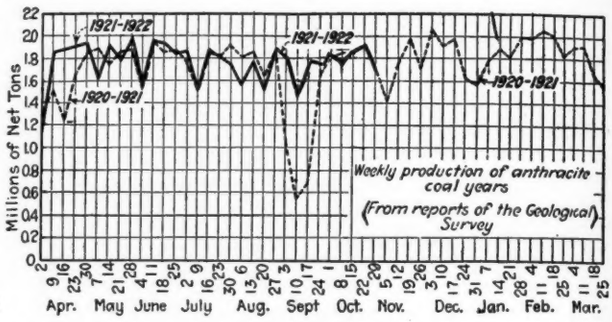
The recent railroad strike threat failed to affect the market materially, but it was the direct cause of considerable additional production of bituminous coal, much of which is now being delivered. The stocks accumulated as a matter of precaution when the rail threat loomed are acting as a buffer against the possibility of a shortage if the miners strike. A large volume of the more recent production is going into storage and were the miners' tie-up to materialize, industries generally would have three or four weeks' reserve which should be ample to tide them over any anticipated emergency. In the Midwest especially, large stocks of steam coals have been accumulating at the mines as a result of the prolonged sluggish market. The big buyer knows this and discounts the importance of placing heavy orders on the current market.

Sporadic Strikes of Short Duration

Judge Anderson's decision against the collection of the check-off was quickly followed last week by the decree of the Federal Court of Appeals in Chicago suspending this injunction, pending a hearing set for Nov. 16. Sporadic strikes in Indiana and Ohio, which followed Judge Anderson's injunction, were short-lived in the light of the second court action. The situation began to look serious when District No. 5—the Pittsburgh region—voted to strike on Nov. 7.

Anthracite production is holding well, stimulated by the seasonal demand for family sizes. Independent premiums are heavy, especially on stove coal, which is in the best call. Steam coals are not so active, but any trouble in the bituminous producing fields would have an immediate bolstering effect and enable operators to move stocks held at the mines.

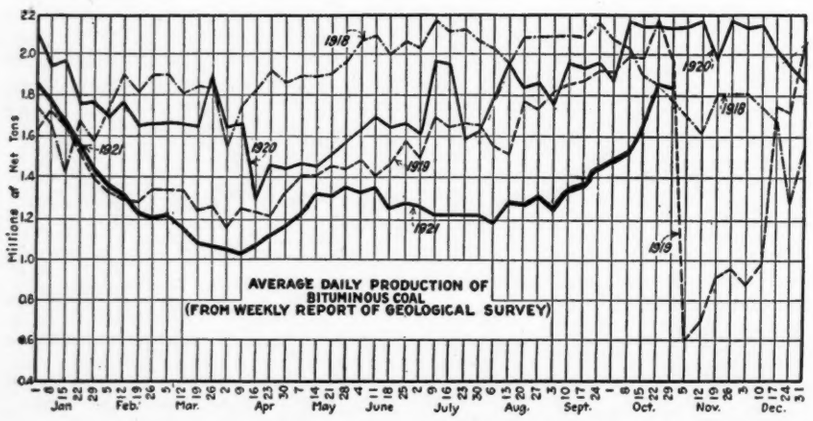
The coke market has turned soft as production has further outdistanced requirements. Furnacemen have withdrawn many of their inquiries, preferring to await the expected freight reductions, and this has left coke operators "holding the bag."


1921-1922
1920-1921
1921-1922
1920-1921
Millions of Net Tons
Weekly production of anthracite coal years
(From reports of the Geological Survey)
Apr. May June July Aug. Sept Oct. Nov. Dec. Jan. Feb. Mar.

BITUMINOUS

Production declined 107,000 tons during the week ended Oct. 29, when 10,951,000 net tons were mined. The decline in output following the removal of the rail-strike threat shows how readily production responds to variations in demand. With transportation assured, the demand almost immediately slipped back and output declined accordingly. The decline continued into last week—Oct. 31-Nov. 5. Preliminary reports on Monday, Oct. 31, show a decline of 4,679 cars loaded, compared with the preceding Monday. Loadings were sharply reduced on Nov. 1 by the observance of a religious holiday, and the week's output was further affected by the strikes in Ohio and Indiana as a protest against the check-off injunction.

October production is estimated at 43,741,000 tons, according to the Geological Survey. This is an increase of 8,614,000 tons over the preceding month. Doubtless the demand was mainly stimulated by the possibility of a stoppage of transportation, rather than by an increase in consumption.



Estimates of Production

(Net Tons)

BITUMINOUS COAL

Week Ended	1921	1920
Oct. 15 (*b*)	9,711,000	12,110,000
Oct. 22 (*b*)	11,058,000	12,232,000
Oct. 29 (*a*)	10,951,000	12,407,000
Daily average	1,825,000	2,068,000
Calendar year	338,214,000	448,788,000
Daily average, calendar year	1,324,000	1,754,000

ANTHRACITE

Oct. 15	1,843,000	1,906,000
Oct. 22 (*b*)	1,942,000	1,969,000
Oct. 29 (*a*)	1,780,000	1,743,000
Calendar year	73,433,000	73,409,000

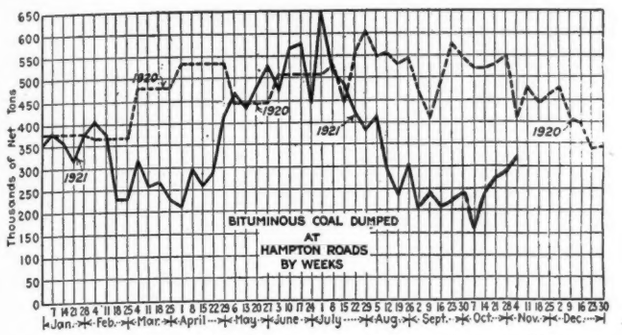
COKE

Oct. 22	102,000	391,000
Oct. 29 (*a*)	102,000	422,000
Calendar year	4,496,000	17,688,000

(*a*) Subject to revision. (*b*) Revised from last report.

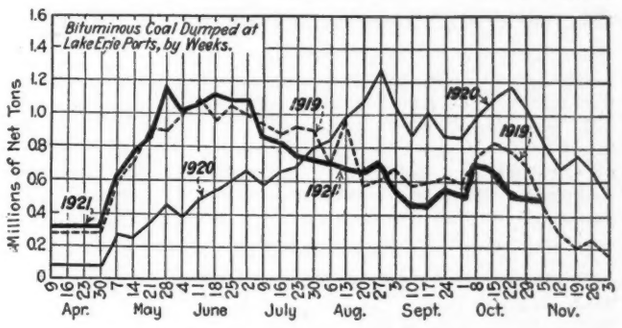
However, the month's output was lower than that in any recent year but 1914, when 37,600,000 tons were produced.

Retail bituminous stocks have been greatly increased during the past few weeks. The steam markets of Baltimore, Philadelphia and New York fail to reflect the possibility of any operating troubles. New England consumers are again apathetic and sales are dragging. Industries in that section are not manufacturing goods ahead of immediate orders booked and are basing their fuel requirements accordingly.


Thousands of Net Tons
BITUMINOUS COAL DUMPED AT HAMPTON ROADS BY WEEKS
1920
1921
Jan. Feb. Mar. April May June July Aug. Sept. Oct. Nov. Dec.

Hampton Roads shippers are feeling this reaction, as coastwise markets have comprised two-thirds of the recent pier activity. Prices have softened on marine freights. Total dumpings at the piers were 294,334 gross tons in the week ended Nov. 3, as compared with 252,694 in the preceding week. A decline in dumpings for this week is probable, brought about by the return of a sluggish coastwise market. British export quotations have again dropped, showing the futility of any hope for early American business abroad and export tonnage is mainly going to the West Indies and Southern ports.

While Secretary Hoover has expressed the opinion that he does not expect anything to come from the negotiations looking to the employment of Shipping Board ships in the export coal trade, operators still entertain some hope that a plan may yet be worked out. Even should the Shipping



Current Quotations—Spot Prices, Bituminous Coal—Net Tons, F. O. B. Mines

	Market Quoted	Oct. 3 1921	Oct. 24, 1921	Oct. 31, 1921	Nov. 5, 1921†
Low-Volatile, Eastern					
Pocahontas lump	Columbus	$4.75	$4.70	$4.80	**$4.70@$4.95**
Pocahontas mine run	Columbus	2.80	2.65	2.55	2.35@ 2.70
Pocahontas screenings	Columbus	2.10	1.60	1.75	1.50@ 2.00
Pocahontas lump	Chicago	4 75	4.75	4.75	4.50@ 5.00
Pocahontas mine run	Chicago	2.65	3.15	3.15	2.75@ 3.50
*Smokeless mine run	Boston	4.90	4.90	4.80	4.75@ 4.90
Clearfield mine run	Boston	1.95	1.95	1.95	1.75@ 2.15
Cambria mine run	Boston	2.35	2.45	2.45	2.10@ 2.75
Somerset mine run	Boston	1.80	1.90	1.90	1.60@ 2.15
Pool 1 (Navy Standard)	New York	3.25	3.40	3.25	*3.00@ 3.40*
Pool 1 (Navy Standard)	Philadelphia	3.10	3.15	3.15	3.00@ 3.30
Pool 1 (Navy Standard)	Baltimore	2.80	2.90	2.65	2.65
Pool 9 (Super. Low Vol.)	New York	2.45	2.60	2.65	*2.45@ 2.60*
Pool 9 (Super. Low Vol.)	Philadelphia	2.40	2.45	2.45	2.25@ 2.60
Pool 9 (Super. Low Vol.)	Baltimore	2.65	2.45	2.45	*2.35*
Pool 10 (H. Gr. Low Vol.)	New York	2.15	2.30	2.30	*2.00@ 2.25*
Pool 10 (H. Gr. Low Vol.)	Philadelphia	2.05	2.15	2.15	2.00@ 2.25
Pool 10 (H. Gr. Low Vol.)	Baltimore	2.45	2.20	2.20	*2.00@ 2.15*
Pool 11 (Low Vol.)	New York	1.90	1.85	1.85	1.75@ 2.00
Pool 11 (Low Vol.)	Philadelphia	1.85	1.85	1.85	1.75@ 2.00
Pool 11 (Low Vol.)	Baltimore	2.20	2.00	2.00	*1.85*
High-Volatile, Eastern					
Pool 54-64 (Gas and St.)	New York	1.90	1.80	1.85	*1.50@ 1.80*
Pool 54-64 (Gas and St.)	Philadelphia	1.75	1.75	1.75	*1.65@ 1.80*
Pool 54-64 (Gas and St.)	Baltimore	1.90	1.70	1.75	*1.50@ 1.80*
Pittsburgh sc'd gas	Pittsburgh	2.65	2.65	2.65	2.60@ 2.70
Pittsburgh mine run (St.)	Pittsburgh	2.20	2.15	2.15	2.10@ 2.20
Pittsburgh slack (Gas)	Pittsburgh	2.15	1.65	1.65	1.60@ 1.70
Kanawha lump	Columbus	3.25	3.50	3.30	*3.00@ 3.50*
Kanawha mine run	Columbus	2.00	2.15	2.15	*1.90@ 2.25*
Kanawha screenings	Columbus	1.20	1.15	1.25	*1.00@ 1.25*
Hocking lump	Columbus	3.25	3.30	3.25	3.00@ 3.50
Hocking mine run	Columbus	2.00	2.10	2.05	**2.00@ 2.20**
Hocking screenings	Columbus	1.10	1.10	1.10	.95@ 1.20
Pitts. No. 8 lump	Cleveland	3.25	3.25	3.25	3.00@ 3.50
Pitts. No. 8 mine run	Cleveland	$2.05	$2.20	$2.15	$2.10@$2.20
Pitts. No. 8 screenings	Cleveland	1.55	1.70	1.55	**1.55@ 1.65**
Midwest					
Franklin, Ill. lump	Chicago	3.65	3.95	3.75	*3.25@ 4.05*
Franklin, Ill. mine run	Chicago	2.75	3.00	2.75	**2.75@ 3.00**
Franklin, Ill. screenings	Chicago	1.70	1.90	1.60	1.00@ 2.25
Central, Ill. lump	Chicago	2.50	2.50	2.50	**3.00@ 4 00**
Central, Ill. mine run	Chicago	2.25	2.25	2.25	**2.25@ 2 75**
Central, Ill. screenings	Chicago	1.45	1.75	1.60	**1.50@ 2 25**
Ind. 4th Vein lump	Chicago	2.90	2.95	2.95	**3.00@ 4.05**
Ind. 4th Vein mine run	Chicago	2.55	2.55	2.35	**2.75@ 3.00**
Ind. 4th Vein screenings	Chicago	1.55	1.85	1.55	**1.00@ 2.50**
Ind. 5th Vein lump	Chicago	2.70	2.70	2.70	2.15@ 3.25
Ind. 5th Vein mine run	Chicago	2.50	2.50	2.35	**2.25@ 2.75**
Ind. 5th Vein screenings	Chicago	1.45	1.70	1.55	**1.00@ 2.50**
Standard lump	St. Louis	3.25	3.65	3.35	3.25@ 3.50
Standard mine run	St. Louis	1.85	2.00	1.95	1.90@ 2.00
Standard screenings	St. Louis	0.35	0.90	0.90	*0.50@ 1.00*
West. Ky. lump	Louisville	3.00	2.90	2.90	**3.00@ 3.50**
West Ky. mine run	Louisville	2.25	2.40	2.45	*2.00@ 2.40*
West Ky. screenings	Louisville	1.15	1.25	1.10	*0.40@ 1.25*
South and Southwest					
Big Seam lump	Birmingham	3.75	3.75	3.75	3.25@ 4.25
Big Seam mine run	Birmingham	2.15	2.15	2.15	*2.00@ 2.25*
Big Seam (washed)	Birmingham	2.30	2.30	2.30	2.15@ 2.40
S. E. Ky. lump	Louisville	3.55	3.90	4.00	*3.50@ 4.00*
S. E. Ky. mine run	Louisville	2.10	2.20	2.20	**2.25@ 2.40**
S. E. Ky. screenings	Louisville	1.25	1.35	1.30	1.25@ 1.40
Kansas lump	Kansas City	5.75	.....	5.75	.....
Kansas mine run	Kansas City	4.00	.....	4.00	.....
Kansas screenings	Kansas City	2.40	.....	2.40	.....

*Gross tons, f.o.b. vessel, Hampton Roads.
†Advances over previous week shown in **heavy type**, declines in *italics*.

Current Quotations—Spot Prices, Anthracite—Gross Tons, F. O. B. Mines

	Market Quoted	Freight Rates	Oct. 24, 1921 Independent	Oct. 24, 1921 Company	Oct. 31 1921 Independent	Oct. 31 1921 Company	Nov. 5, 1921† Independent	Nov. 5, 1921† Company
Broken	New York	$2.61	.....	$7.60@$7.75	.....	$7.60@$7.75	.....	$7.60@$7.75
Broken	Philadelphia	2.66	$7.60@$8.20	7.75@ 7.85	$7.60@$8.20	7.75@ 7.85	$7.60@$8.20	7.75@ 7.85
*Broken	Chicago	5.63	13.40	12.80	13.40	12.80	13.40	12.80
Egg	New York	2.61	8.00@ 8.25	7.60@ 7.75	8.00@ 8.25	7.60@ 7.75	8.00@ 8.25	7.60@ 7.75
Egg	Philadelphia	2.66	8.10@ 8.35	7.75@ 7.85	8.10@ 8.35	7.75@ 7.85	8.10@ 8.35	7.75@ 7.85
*Egg	Chicago	5.63	13.40	12.80	13.40	12.80	13.40	12.80
Stove	New York	2.61	8.50@ 9.00	7.90@ 8.10	8.50@ 9.00	7.90@ 8.10	8.50@ 9.00	7.90@ 8.10
Stove	Philadelphia	2.66	8.50@ 8.75	8.00@ 8.35	8.50@ 8.75	8.00@ 8.35	8.50@ 8.75	8.00@ 8.35
*Stove	Chicago	5.63	13.40	12.90	13.40	12.90	13.40	12.90
Chestnut	New York	2.61	8.50@ 9.00	7.90@ 8.10	8.50@ 9.00	7.90@ 8 10	8.50@ 9.00	7.90@ 8.10
Chestnut	Philadelphia	2.66	8.25@ 8.75	8.05@ 8.25	8.25@ 8.75	8.05@ 8 25	8.25@ 8.75	8.05@ 8.25
*Chestnut	Chicago	5.63	13.40	12.80	13.40	12 80	13.40	12.80
Pea	New York	2.47	5.50@ 6.00	6.05@ 6.45	5.75@ 6.00	6.05@ 6.45	5.75@ 6.00	6.05@ 6.45
Pea	Philadelphia	2.38	5.00@ 5.50	6.15@ 6.25	5.00@ 5.50	6.15@ 6.25	5.00@ 5.50	6.15@ 6.25
*Pea	Chicago	5.63	12.40	11.15	12.40	11.15	12.40	11.15
Buckwheat No. 1	New York	2.47	3.25@ 3.50	3.50	3.25@ 3.50	3.50	*2.75@ 3.25*	3.50
Buckwheat No. 1	Philadelphia	2.38	2.75@ 3.25	3.50	2.75@ 3.50	3.50	2.75@ 3.50	3.50
Rice	New York	2.47	2.25@ 2.50	2.50	2.15@ 2 50	2.50	*2.15@ 2.40*	2.50
Rice	Philadelphia	2.38	1.75@ 2.00	2.50	1.75@ 2.25	2.50	1.75@ 2.25	2.50
Barley	New York	2.47	1.25@ 1.50	1.50	1.25@ 1.50	1.50	1.25@ 1.50	1.50
Barley	Philadelphia	2.38	1.00@ 1.25	1.50	1.10@ 1.25	1.50	1.10@ 1.25	1.50
Birdseye	New York	2.47	.....	2.50	.....	2.50	.....	2.50

*Prices and freight rates, net tons; quotations f.o.b. cars, Chicago.
†Advances over previous week shown in **heavy type**, declines in *italics*.

Board consent to the use of its boats for $1 a month, the differences of price in favor of British competitors range 75c. to $2 per ton.

The Lake trade is in a seasonal windup and this is being hastened by the fact that storage space is now exceedingly limited on the Head-of-the-Lakes docks. Interior markets are not so active, which also is hampering the unloading of late cargoes.

September coal shipments through the Soo were 993,848 tons of bituminous and 281,130 tons of anthracite. Dumpings at the lower ports were 498,614 net tons in the week ended Nov. 7—481,650 cargo and 16,964 vessel fuel—as compared with 849,726 tons in the corresponding week in 1920. Cumulative movement for the season is now 21,960,074 tons; in 1920 it was 21,012,741.

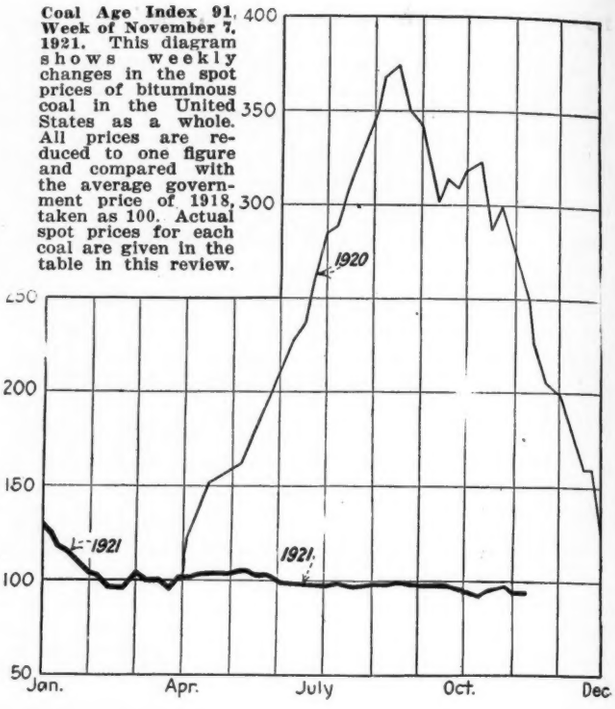
COKE

Production of beehive coke remained at 102,000 net tons during the week ended Oct. 29. Cumulative production for 1921 is 4,496,000 net tons as against 17,688,000 in 1920. The Connellsville market is quiet following the disappearance of inquiries, and prices have softened slightly. An early resumption of demand is anticipated as a reaction of the rail strike threat, which made for a sluggish coke market.

ANTHRACITE

Production of hard coal declined 162,000 net tons in the week ended Oct. 29. The output was 1,780,000 tons, according to the Geological Survey. The decrease is attributed to the observance of Mitchell Day, Oct. 29, and not to any lessened demand on producers.

Stove coal is short in some sections, particularly in the East, where it is the popular size. The steam grades are moving just slowly enough to keep independent quotations within the bounds of company schedules, but any interruption to bituminous mining would immediately react to the benefit of the anthracite steam sizes. Lake shipments are surprisingly heavy, considering the lateness of the season. During the week ended Nov. 2 there were 106,400 net tons dumped, as compared with 92,100 in the preceding week.



Coal Age Index 91, Week of November 7, 1921. This diagram shows weekly changes in the spot prices of bituminous coal in the United States as a whole. All prices are reduced to one figure and compared with the average government price of 1918, taken as 100. Actual spot prices for each coal are given in the table in this review.

Foreign Market And Export News

Hampton Roads Feels the Slump in New England Demand; Export Markets Inactive

Business has suffered a decided slump following the recall of the railroad strike, a number of orders for New England having been canceled. The tone of the market is very weak, with dealers in some instances making very liberal offers, but finding little demand.

The bunker business is showing signs of activity, although the greater portion of the tonnage sold is on contract, with very little doing in the spot market. The slackening of shipments to New England is keenly felt, and is resulting in softened rates in the coastwise trade.

At one time during the week the supply of low-volatile coals at the Hampton Roads piers was reduced to the lowest point it has reached during the year, several vessels having been delayed awaiting cargo. At the end of the week, however, all piers were well stocked, approximately 200,000 tons of coal being reported on hand.

A total of 1,058,000 tons moved through Hampton Roads during October, which was 1,000,000 tons below the record made for October of last year, and on a par with February and March of this year, the lowest months except September. Late Cardiff quotations have put a quietus on the chance of securing any early business abroad.

With foreign markets out of reach at least temporarily, American shippers are concentrating their attention on the bunker trade and points in the West Indies as well as South American ports. The bunker business is a little more active although spot prices are not proving very attractive. During the week ended Oct. 29 there were 74,369 net tons of foreign coal and 30,467 tons of bunker coal dumped at the Roads. This represents a material increase in foreign cargoes over recent weeks.

Coal Paragraphs from Foreign Lands

GERMANY — Ruhr production increased slightly during the week ended Oct. 22, according to a cable to *Coal Age*. The output was 1,803,000 metric tons, compared with 1,787,000 tons during the preceding week.

ITALY — British coal is carrying lower quotations on the Genoa market, according to a cable to *Coal Age*. Cardiff steam firsts are 41s. 9d. this week as compared with 42s. 9d. last week and 43s. 6d. during the first period in October.

Imports from England have reached a more normal level with the termination of the miners' strike in England, whereas the quantity received from America is constantly diminishing. During the first 15 days of September 265,362 tons were imported. England furnished 207,763 tons, and in addition 65,487 tons were received from Westphalia and 40,460 from Upper Silesia. Only 50,651 tons were received from the United States.

CZECHO-SLOVAKIA—Owing to the depreciation of the German mark, exporting of coal and lignite to Germany is seriously threatened. The quantity of lignite exported to Germany from the Bruex mines alone represents a value of 32 million marks per month, which now shows a decrease by 13 million marks. Attempts on the part of the exporters to increase the price even slightly have failed.

POLAND — Bituminous production in 1920 was 6,408,684 metric tons, compared with 6,083 687 in 1919 and 8,988,581 in 1913. The output, January-May 1921, was 2,838,453 tons. Lignite production in 1920 was 251,822 tons; in 1919 it was 178,949 and in 1913, 192,489.

RUSSIA — The Russian government and a group of trade union leaders from England and America have completed an agreement for operating the Komorovo coal mines in the Kuznesk basin, in the government Tomsk, Siberia. The Kuznesk basin has one of the largest coal reserves in the world.

AUSTRALIA — The New South Wales Ministry has imposed a charge of sixpence per ton for the use of cranes, hoists and elevators at the port of Newcastle, and bunker coal prices have in consequence been correspondingly increased. Rates are now as follows: Sydney, 32s.; Newcastle, 22s. 6d.; Port Kembla. 31s. 3d.; Melbourne, 40s. 6d. @43s. 6d., and Adelaide, 45s. 6d.@50s. 6d. Wellington (N. Z.) quotations are 47s. 9d.@51s. 10d.

BELGIUM—The industrial coal market is still weak although certain half-bituminous descriptions are in demand. Numerous resumptions in the glass industry are helping to reduce stocks.

French Market Featureless; Stocks Are Heavy

Saar Prices Cut for November—More British Pits Close—Export Markets Quiet, Despite Lowered Quotations—Further Government Aid Suggested

Saar coal prices for November have been reduced between 7 and 10 francs per ton by the French administration. On Oct. 1 a similar reduction was made.

The French market presents nothing of any interest to the American coal exporter. Demands are limited to hand-to-mouth dealings on account of the mild weather and the still unsettled industrial position.

Official figures of coal imports and production for August show an increase of 617,000 tons over the corresponding figures for July, which already marked an increase of 321,000 tons over June. This is chiefly due to the larger imports of British coals, (432,000 tons more than in July).

FRENCH PRODUCTION AND IMPORTS IN AUGUST

	July, Tons	August, Tons
French production	1,912,005	2,036,906
Saar imports	252,531	267,692
British imports	241,486	673,782
Belgian imports	227,640	287,045
German imports	596,089	614,267
American imports	106,618	63,641
Total	3,326,369	3,943,333

French coals in the above table include production of the Lorraine mines. Saar coals represent only tonnage supplied to France, the total production having been 637,455 tons.

Stocks of coals in various ports increased by about 90,000 tons, but stocks in the hands of the railways decreased by about 40,000 tons.

FRENCH COAL STOCKS, AUG. 31, 1921

	Tons
State Railways	272,500
Nord Railways	163,265
Est Railways	151,246
P.L.M. Railways	390,920
P. O. Railways	272,895
Midi Railways	55,900
Total railways	1,306,726
In various ports	689,584
Paris Gas Works	159,296

Figures of stocks at the mines are not yet available. Railway stocks on Aug. 31 were sufficient to last 45 days; port supplies were adequate for 34 days.

Closing of British Pits Alternative of Lower Production Costs; Exports Lag

An inquiry has been received on the Newcastle market from Utrecht Gasworks for the supply of 100,000 tons of best gas coals for shipment over next year.

There is a general feeling that the British coal industry is again being allowed to drift toward a crisis. For instance, in the exporting districts 200,000 miners are unemployed and the demand shows no sign of increasing. As the owners are not likely to surrender their profits in wages, the scale in November must be formulated on the economic state of the industry. This has stimulated the miners to appeal to the government to devote to the industry the balance of the subsidy granted in the June settlement, amounting to about three millions, sterling.

More collieries in Wales are closing down. The largest colliery in the Swansea district, the Graigola Merthyr, has closed for an indefinite period, and the shutting down of the Clydach pits involves 2,000 miners. Lanarkshire is also badly hit. By the beginning of November, 16 pits were closed down owing partly to lack of demand and the owners' losses.

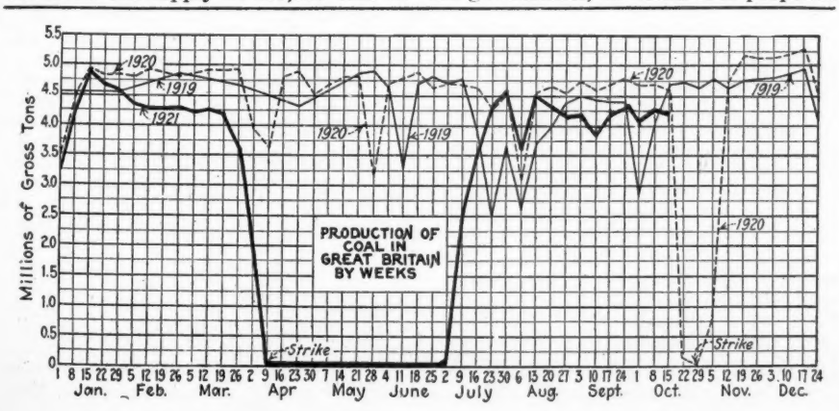
Owners of Scottish mines which recently closed have disclaimed all responsibility for the non-fulfillment of contracts on the ground of a protecting clause in the contract form. The shippers, however, state that the closing of the pits was due to factors over which the owners had no control, and threaten not only to hold the pits liable for any loss incurred in repurchasing coal to fill their contracts with Europe, but also for any demurrage charges involved through detention of their ships.

Wages of the Scottish miners have been decreased 4s. per day. On this basis the November wage is 9s. 8d., as compared with 21s. 6d. last February. Scotch miners are averaging four days weekly.

Various means are being suggested to revive the industry. Besides returning the £3,000,000 subsidy balance to the industry, it has been suggested that the mining industry be loaned £1,000,000 from public funds to be administered by the National Coal Board in an endeavor to carry on the work of the pits which are closing down. It has been estimated that by the wise application of this money the price of coal could be reduced by 10s. per ton.

The Miners' Federation is asking for government help to relieve distress and to put the industry on its feet again. A new scheme has been submitted to the government, in which it is proposed that the maximum price for industrial coal should be fixed at 30s. per ton, delivered, and that the government for a period should make up the difference to the coal owners and railway companies.

South Wales reports a slight increase in orders from the Far East, Port Said and South America. The Continental trade, however, remains poor.


PRODUCTION OF COAL IN GREAT BRITAIN BY WEEKS
Millions of Gross Tons
1920
1919
1921
Strike
Jan. Feb. Mar. Apr May June July Aug. Sept. Oct. Nov. Dec.

Export Clearances, Week Ended Nov. 3

FROM HAMPTON ROADS

	Tons
For Atlantic Islands:	
Nor. SS. Cibao, for Kingston	1,061
For Brazil:	
Am. SS. West Coru, for Buenos Aires	6,565
Br. SS. Highmead, for Buenos Aires	6,197
For Cuba:	
Nor. SS. Gro, for Havana	6,659
For Italy:	
Br. SS. Livingstonia, for Genoa	6,112
Br. S.S. Saxilby, for Genoa	5,859
For Peru:	
Nor. SS. Remus, for Callao	1,970

FROM PHILADELPHIA

For Atlantic Islands:	
Br. SS. Cumberland Queen, for Martinique	624

Hampton Roads Pier Situation

	Week Ended Oct. 27	Week Ended Nov. 3
N. & W. Piers, Lamberts Pt.:		
Cars on hand	1,663	1,588
Tons on hand	87,268	79,064
Tons dumped for week	125,119	139,061
Tonnage waiting	13,000	21,325
Virginian Ry. Piers, Sewalls Pt.:		
Cars on hand	925	1,363
Tons on hand	46,250	68,150
Tons dumped for week	93,888	111,781
Tonnage waiting	24,436	28,302
C. & O. Piers, Newport News:		
Cars on hand	838	947
Tons on hand	41,900	47,350
Tons dumped for week	33,687	43,492
Tonnage waiting	3,600	2,710

Pier and Bunker Prices, Gross Tons

(Foreign Bunker Quotations by Cable to Coal Age)

PIERS

	Oct. 29	Nov. 5†
Pool 9, New York	$5.90@$6.10	*$5.80@$5.90*
Pool 10, New York	5.60@ 5.80	*5.60@ 5.75*
Pool 9, Philadelphia	5.75@ 5.95	5.75@ 5.95
Pool 10, Philadelphia	5.50@ 5.75	5.50@ 5.75
Pool 71, Philadelphia	6.00@ 6.20	6.00@ 6 20
Pool 1, Hamp. Rds.	5.10@ 5.20	*4.75@ 5.00*
Pools 5-6-7 Hamp.Rds.	4.25@ 4.40	*4.25*
Pool 2, Hamp. Rds.		4.50@ 4.75

BUNKERS

Pool 9, New York	6.25@ 6.35	*6.15@ 6.25*
Pool 10, New York	6.00@ 6.15	*5.95@ 6.15*
Pool 9 Philadelphia	6.00@ 6.25	6.00@ 6.25
Pool 10, Philadelphia	5.75@ 6.00	5.75@ 6.00
Pool 1, Hamp Rds.	5.25@ 5.35	*5.15*
Pool 2, Hamp. Rds.	5.00@ 5.15	*4.90*
Welsh Gibraltar	47s. 6d. f.o.b.	47s. 6d. f.o.b.
Welsh, Rio de Janeiro	65s. f.o.b.	65s. f.o.b.
Welsh, Lisbon	57s. 6d. f.o.b.	57s. 6d.f.o.b.
Welsh, La Plata	60s. f.o.b.	60s. f.o.b.
Welsh, Marseilles	1.25 fr.	1.20 fr. @ 1.30 fr.
Belgian, Antwerp	40s.	40s.
Alexandria		48s. f.o.b.
Bombay		35 rupees
Capetown		42s. 9d.

C.I.F. Prices, American Coal

(In Gross Tons)

	Oct. 29 Low Vol.	Oct. 29 High Vol.	Nov. 5† Low Vol.	Nov. 5† High Vol.
French Atlantic	$9.00	$8.85	$9.00	$8.85
West Italy	8.95	8.70	*8.90*	8.70
The Plate	9.75	9.60	9.75	9.60
Rio Janeiro	9.30	9.20	9.35	9.20

These quotations are purely nominal and as far as can be learned no business is being done in these markets.

Current Quotations British Coals f.o.b. Port, Gross Tons

Cardiff	Oct. 29	Nov. 5†
Admiralty Large	28s. 6d.	*27s.@28s.*
Steam, Smalls	19s. 6d.	*18s.6d.@19s.6d*
Newcastle.		
Best Steams	24s. 6d.	*23s.@23s.6d.*
Best Gas	25s. 6d.	*24s.@24s.6d.*
Best Bunkers	24s. 6d.	*23s.@23s.6d.*

†Advance over previous week shown in **heavy type**, declines in *italics*.

Reports From the Market Centers

New England

BOSTON

Market Drags — Inquiry Slackened on Announcement That Strike Was Off— Coastwise Freights Weaker — Anthracite Domestic in Good Request.

Bituminous—The current market is in heavy shape. It would need a clairvoyant to forecast demand in December and January, but November inquiry is bound to be light. Practically all the shippers are diligently convassing the whole consuming territory and no prospect is neglected. Prices are still at the low point reached some weeks ago. Every effort is being made to prevent any further reduction in spot figures, but unless buying improves soon there will probably be a slight recession.

While railroad strike talk seemed to make no appreciable increase in demand in New England, yet it is apparent now that it was a factor in sustaining inquiry. In any case, consumers are again apathetic and there is a marked falling off in the request for steam grades. Industries here see no real light ahead and are plugging along from hand to mouth, for the most part taking care not to accumulate goods beyond orders already in hand. That being the situation with most consumers, it is hard to see where any spurt in demand can come from.

Obviously, the smokeless shippers have felt the reaction, because the last few months they have been selling nearly two-thirds of the whole tonnage placed in this territory. A few factors who have cargo balances as yet undisposed of are striving very hard to get the best return possible, but $6.15@$6.25 continues the normal basis on cars, Providence or Boston, for inland delivery. Sales f.o.b. vessel at Hampton Roads have been reported down to $4.50@$4.60 for Pool 2, while $4.75@$4.90 continues the base market price for Navy acceptable coal.

Producers in the central Pennsylvania districts are also scouring the market for orders. Many of them have been able thus far to scrape along on three to four days a week, but even on contracts shipments have steadily dwindled of late and sales agents are at a loss to know which way to turn. One result is a further drop in receipts all-rail through the Hudson River gateways. Even the railroads are taking less fuel than was the case a month ago.

Sailing vessels, 3,000 tons and upwards, continue available at 85c., Hampton Roads to Boston or Portland, together with certain long-legged barges of from 2,000 to 3,000 tons, but it is reasonable to expect that an even lower rate will materialize with the lack of orders. Smaller barges of less draft are still quoted around $1@$1.15, same range of ports, but within a few days it has become so difficult to place them that offers are being solicited.

Anthracite—Domestic sizes continue in strong request, especially stove and chestnut. Shippers are bringing pressure to bear on retailers to take egg and pea, and to a degree this is successful.

Reserves here are in good shape, although continued seasonable weather would bring them down and create a sharper demand on the producer. Household trade is brisk in practically all the cities and most shippers are well supplied with orders for the present.

Tidewater—East

PHILADELPHIA

Anthracite Retail Trade Quiet — Some Price Cutting — Steam Demand Ordinary—Bituminous Unaffected by New Strike Threat—Best Demand for Good Coals.

Anthracite—The retail trade fails to revive from the slowing down as reported last week, despite the much cooler weather which has arrived. The good buying during October was due solely to the strike threat, and the real intent of the consumer evidently is to buy in small quantities.

Dealers generally are anxious for further shipments of nut. There has also been some demand for pea, but nothing like the trade has been accustomed at this time of the year. For some reason the coming of the first snowstorm is always looked forward to as being the beginning of the pea coal movement.

There is still a good deal of variation in retail prices and while most dealers consider $14.50 a regular price for stove and nut, the consumer who shows an inclination to shop around can buy these sizes in many places as low as $13.75. There is also a tendency to cut on egg, a price as low as $13.25 being recorded on this.

The steam situation is fair, with buckwheat in ordinary demand, although no good coals are being sold off. Rice is the one size that is slow.

Bituminous—The trade is calm and it looks as though nothing short of an earthquake could disturb it. Despite all the rumors of strike movements on account of the check-off decision the trade simply refuses to show any kind of a reaction. Consumers, particularly the largest ones, show the utmost indifference and are still confining purchases to immediate needs.

The price situation is somewhat puzzling to the shippers, as the fluctuations for the past two months, outside of a few days when the rail strike seemed almost possible, have varied but little. The feeling grows now that $3 seems to be near the average that can be expected all winter for good coal.

NEW YORK

Anthracite Steam Sizes May Be Strengthened—Domestic in Strong Demand—Bituminous Situation Quiet— Stocks Are Heavy — No Interest in Operators' Difficulties.

Anthracite—Any suspension of operations due to the check-off controversy will result in a heavy demand for the steam coals and cause a cleaning up of those sizes, which have been a burden for the past several months. Salesmen have been hard pushed to move these coals lately and while some buckwheat and rice brought company circular, most sales were reported as below those figures. Barley was in better shape.

Domestic continues strong with egg the easiest. Demand is growing, however, and operators do not look for any let-up if the temperatures remain seasonable. Consumers who have to buy in small quantities are now coming into the market and the retail trade is a trifle more brisk.

The railroad strike talk resulted in enough orders being placed with the producers to keep them busy for some time to come. Some producers who have large tonnages of egg on hand have, it is reported, undertaken to break it up.

Independents are having no trouble in moving their domestic coals and in some instances are reported as quoting $9.25 for stove and chestnut. A small lot of distressed egg coal was being offered this week on the basis of $7.40 at the mine.

Bituminous—Market conditions continue quiet. Even the check-off injunction did not cause any apprehension among local consumers.

Consumers are showing no apparent interest in the future. Their stock piles are sufficient to take care of immediate wants and although quotations show about the same level as last week they have no desire to add to their stocks. Many consumers requested advance shipments on their contracts during the railroad strike agitation and so far as possible they were accommodated. There was also heavy buying by those consumers who watch the spot market with the result that most users are over-stocked and will not enter the market again until forced to.

Local shippers have succeeded fairly well in preventing large movement to the docks unless there appeared a reasonable chance of disposing of the coal. By doing so they have prevented an accumulation here and the docks are in good condition.

Some good grades of coal already loaded in boats were being offered at alongside prices at slightly lower figures than were being quoted generally. These offers were few however.

BALTIMORE

Market More Stable—Strike Talk Fails to Strengthen Prices—Anthracite Retail Trade More Active.

Bituminous—With the railroad strike possibilities averted there now looms in the coal world the shadow of the check-off ruling and the consequent threat of a mine strike of national proportions. As with the rail strike threat, however, there has been no acceleration to trading so far from this new trouble. With the rail strike threat came a small spurt to the market, but there has since been a recession to the old standards.

The apparent lack of confidence in an early boost to the market, despite the strike clouds, is shown by quotations of high grade steam and gas coals for delivery over November and the first half of December. While mines now producing best coals are fairly well covered by contract on the more exclusive grades and the demand at this season is pretty sure to increase, the

fact that a number of operations now closed stand ready to plunge into the open field as soon as demand warrants even a partial resumption of operation, argues against much tighter conditions as to selling in the near future.

The export movement of soft coal from Baltimore for October reached a total of 37,385 tons cargo and 2,573 tons bunker. The trade is analyzing the collapse of the export business and the reasons thereof. Foreign exchange rates are blamed for the most part.

Anthracite—The ordinary conditions of winter's approach have undoubtedly been the principal cause of the stiffening of the market, although there is no doubt that the talk of railroad strike did to some extent stimulate retail orders. Yard reserves have been considerably depleted, although the run of coal to this city for October exceeded by about one third the delivery during September and August, when a decided deficiency was piled up.

Prices remain unchanged except that some dealers are now charging 25c. per ton more than the summer schedule for stove, apparently to take care of the fact that they are required to buy pea or egg in conjunction with the more popular size. Some of the delay in public buying is ascribed to the idea that the prosecution of retail dealers, on a charge of price fixing, is to bring lower rates.

BUFFALO

Demand for Bituminous Light—Check-Off Struggle Certain — Hard Coal Easier but Supply Is Light.

Bituminous—Demand has fallen off some, but it was so light all the time that shippers will go on much as before. Consumers had a big supply and were bound to buy sparingly for a while anyhow. Some of them will hardly be heard from in months, for they have laid in all they can carry.

There will be some improvement in buying when the April wage fixing time approaches. As to the threatened strike over the check-off injunction, the unions are not likely to give up without something of a struggle. However, there are a good many things they can do without making the fight a general strike.

Quotations are being shaded a little; $2.75 for Youghiogheny gas lump, $2.50 for Pittsburgh and No. 8 steam lump, $2.25 for Allegheny Valley and all mine run and $1.50@$1.75 for slack.

Anthracite—The demand is not quite so good since the settlement of the rail trouble, though that was not expected to affect it much. As the supply has fallen off too, it is not easy to say what the real change is. Some of the big retail trestles have been out of certain sizes, especially stove, some days at a time lately and have refused to sell to any but regular customers.

The fact that independent anthracite does not command much of a premium shows that the actual shortage is not heavy and it may happen that the waiting at the trestles for loads will not last long.

Lake—Shipments have fallen off lately, on account of sending the coal into some other market. Loadings for the week ended Nov. 2 were 106,400 net tons, of which 36,000 tons cleared for Milwaukee, 35,500 for Duluth and Superior, 21,300 for Chicago, 6,000 for Green Bay, 5,900 for Sault, Ont., and 1,700 tons for Racine.

Coke—Jobbers report an almost entire absence of demand. The furnaces have contracts for a certain amount and it appears that they are not using much more than that at present.

Canada

TORONTO

Consumers Still Behind with Orders for Winter—Increased Shipments from Mines—Bituminous Weaker.

Dealers are not nearly so busy as is usually the case at this season as many consumers are still backward in laying in their winter supplies. Receipts of coal from the mines show an increase as a number of dealers, fearing an interruption of traffic by the threatened railroad strike, sent in heavy orders which are now coming forward. As a consequence, the market may be temporarily overstocked in some lines. Bituminous is little in demand and prices have a decided downward tendency.

Quotations are as follows:

Retail:	
Anthracite, egg, stove, nut and grate	$15.50
Pea	14.00
Bituminous steam	10.25@10.75
Bituminous lump	12.00
Cannel	16.00
Wholesale, f.o.b. cars at destination:	
¾-in. lump	7.15@ 8.25
Slack	6.00@ 6.75

Northwest

MINNEAPOLIS

Market Dormant with Warm Weather —Buying Reduced to Minimum After Rail Trouble Passes — Small Coals Weaker.

The calling off of the railroad strike took the last argument which has been at all effective in the matter of selling coal. When the announcement came out in the daily press, it was followed instantly by a letting up of orders. Large steam users who had been taking in considerably more than their customary allotment, immediately cut down to the old amount or less.

As long as mild weather prevails, there will be but little interest in coal buying by either steam or domestic users. Both of them are determined to buy no sooner and certainly no more coal than they can possibly get along with.

Buckwheat coal has been dropped $1 a ton because of the accumulation at the docks, due to moving regular sizes. Soft coal screenings have also been accumulating and have had no regular market price.

Coal men are becoming cautious about any further predictions of what may happen on their commodity. This is the first season in five years that the approach of fall did not give serious ground for fearing a coal shortage. And yet thanks to exceptional effort put forth in one way or another, no real shortage ever hit the Northwest in those five years. So the trade is really penalized for its good work in averting what threatened to be a serious shortage.

The situation is still a deadlock so far as urging buying upon either steam user or consumer. In some instances it is a case of financial matters. The delay in buying means that much more time before the bill will have to be paid, a matter worth considering in these days of dull collections.

MILWAUKEE

Market Quiet and Uneventful — State Investigates Freight Rates — Receipts Heavy and Docks Congested.

To attempt to describe the condition of the coal market thus far in November would only mean a repetition of a story which has been retold for weeks past. The first cold snap will lift the "jinx" of procrastination on the part of consumers; then, it is expected, serious congestion of delivery service will ensue.

Meanwhile dock companies are kept busy in developing storage room on already heavily laden docks, and in shifting about coal which persists in heating. Deliveries of both anthracite and soft coal continue very light for the season.

An investigation of coal and coke freight rates in Wisconsin, with a view of making a material reduction, has been ordered by the State Railroad Commission at the instance of Governor Blaine. The time for the first hearing has not been set as yet. The governor holds that high freight rates on fuel are placing a burden on the public generally in the form of excessive charges by public utilities.

Up to and including Oct. 31, 104 cargoes of anthracite and 282 cargoes of soft coal had been received over Milwaukee docks, the aggregate being 848,045 and 2,341,884 tons respectively. During the same period last year receipts of anthracite were 701,363 tons, and soft coal 1,921,417 tons. The total gain over 1920, with a little over a month of navigation ahead, is 559,109 tons. A fair run of late cargoes is expected.

DULUTH

Market Subsides After Rail Strike Flurry—Docks Nearly Full—Small Coals at Bargains to Avoid Fires.

A spell of warm weather, coupled with the announcement that the railroad strike is over has slowed shipments from Duluth docks considerably. It is thought that orders will not pick up until cold weather sets in again and that then the railroads will be unable to supply the demand for cars.

As a result of the decrease in outward shipments the docks are filling up rapidly and several have, of necessity, held up the unloading of boats for several days to wait for outward shipments to clear needed spaces. It is estimated that at present 5,700,000 tons are stored on the docks, which is within 300,000 tons of the total maximum capacity.

Shipments from lower ports will soon be discontinued as but few ore cargoes remained on the docks here for downward shipment. When these are exhausted grain alone will remain to take the bottoms back to Lake Erie, and this trade will require but a small proportion of the available vessels.

Prices are generally firm, the only disposition to cut being in screenings which are in danger of conflagration. Screenings and buckwheat are quoted down as low as $3@$6 from regular prices of $4@$8.50.

Hocking and Youghiogheny lump are at $7, run of pile at $6.75, Pocahontas lump at $10 and run of mine at $7. Anthracite egg is $12.75, stove and nut,

$13, pea, $11, and buckwheat, $6@$8.50, with very slow sales.

Fires are now burning on the Inland and Clarkson docks at Duluth-Superior harbor. Heavy stocks of coal are making fire fighting difficult, but a general conflagration is not threatened.

Inland West

DETROIT

Steam and Domestic Users Continue to Delay Purchases—Receipts Are Small—Anthracite Stocks Large.

Offerings of high grade bituminous fail to arouse the interest of steam or domestic users. Wholesalers and jobbers are very much pleased that the danger of any railway trouble has been avoided. With uninterrupted transportation facilities there will be a better opportunity for supplementing the present apparently inadequate fuel supply when consumers finally decide the time has arrived for making purchases.

The buyers' policy of delay is made easier of continuance by the present diminished consumption rate of many of the factories and industrial plants. Because of this condition small purchases from time to time, when bargains are available, provide sufficient coal to satisfy current requirements.

Household consumers are lapsing into a less active interest in the market, their attitude reflecting a week of higher temperatures. The retailers, however, have made progress in distribution, although their stocks are not down to a level where renewal orders are frequent.

Pittsburgh No. 8 1¼-in. lump is quoted at the mines at $2.40, ¾-in. lump is $2.35, mine-run, $2.15, slack, $1.65. West Virginia 4-in. splint lump is $3.25; 2-in. lump is $3; egg, $2.50; mine-run, $2; nut and slack, $1.25. Ohio lump is $3@$3.25; egg, $2.40; mine-run, $1.90; nut and slack, $1.15@$1.25. Smokeless lump and egg is $4.75; mine-run, $2.65; slack, $1.60.

CHICAGO

Buyers Indifferent in Face of Impending Strike—Steam Prices Up—Retail Trade Quiet.

Taking into consideration the seriousness of the situation with the United Mine Workers, coal buyers are unbelievably indifferent. The operators, as soon as they saw that trouble was brewing, raised the price of their steam coals to a level which would enable them to make a little profit for the first time this year. The buyers, however, are not purchasing at the new quotations, while operators, on the other hand, are occupying themselves for the time being by filling old orders.

The indifference on the part of the big buyers is, perhaps, brought about by the fact that they are fully aware that some of the big mines in southern Illinois have very large storage piles of screenings on hand. In the event of a strike, this coal could be loaded and sent up to Chicago. There are so many storage piles in the state that the buyers believe they can purchase what they need at low prices, as these screenings have been held on hand all summer and the operators are anxious to get rid of them.

No price changes have taken place on domestic coals, either Eastern or Western. Retail dealers tell us the public are not buying at all and have taken the news of the impending strike with absolute indifference. Some retailers are advancing their prices a little. This indifference is hard to understand, because the retail coal dealers in Chicago have nowhere near as much coal on hand as they ought to have. This is also true of the steam plants.

ST. LOUIS

Dealers Carry Unusally Heavy Stocks — Warm Weather Cuts Demand — Steam Business Dead.

Retailers are today carrying approximately 300,000 tons of coal in storage, which is twice as much as has ever been carried, as far as can be learned. This is pretty well scattered over all the coals used.

Anticipating the railroad strike, dealers bought heavily, with the result that some of them will have coal arriving for the next two weeks. They are unloading it in the alleys and in lots adjacent to the railroad, wherever space can be secured.

Mild weather is causing the dealers to take an unusually heavy loss. The storage of 300,000 tons will carry a minimum cost of $1 a ton, which means that $300,000 has been spent to protect the public against a strike that failed to take place. This expense must be absorbed in the selling price, which instead of getting stronger has a tendency to weaken under this enormous surplus stock.

Steam is unusually quiet, plants having stocked up in anticipation of the strike. This surplus is now being drawn on, to the exclusion of new orders.

The country demand for domestic has almost ceased, and the same condition prevails on country steam business. A little coal is, however, moving to Omaha, Kansas City and Chicago from the Standard districts, but prices are below cost.

COLUMBUS

Indianapolis Injunction Proceedings Watched With Interest—Buying Movement Anticipated—Retail Demand Increasing.

Judge Anderson's injunction was followed by the walkout of more than 1,000 miners in the Hocking Valley. Just how widespread the trouble will be is a matter of conjecture but operators view the developments with considerable concern.

Domestic demand has been the best feature, as colder weather has stimulated the buying. Retail stocks are not large and some dealers have been buying rather liberally. Consumers are looking after their winter's supply of fuel with more interest and retailers have been fairly busy making deliveries. Unemployment on the part of wage earners is a serious handicap as dealers are disposed to ask for cash.

Retail prices are steady at former levels. Hocking lump retails around $6@$6.50 while West Virginia splints sell $7.25@$7.75, depending on preparation. Anthracite is fairly steady, around $15, while Pocahontas is quoted $9@$9.50.

There is a considerable tonnage moving to the Northwest as shown by the records of loadings at the lower docks. The tonnage, however, is gradually being reduced and the Lake trade is expected to close rather suddenly.

There was little steam demand following the flurry caused by the threatened railroad strike. The buying because of the injunction mix-up has not yet developed strongly. It is believed that some large users will be concerned about their fuel supply to a point where they will accumulate some stocks. Screenings have again become weaker all along the line.

CINCINNATI

Market Inactive—Prices Recede—Much Tonnage on Rails—Retail Trade Quiet.

Trade conditions have rarely been so muddled and snarled as they are in Cincinnati at the present time. A large tonnage purchased on the C. & O. and held for orders in various yards by speculators acts as a drug on the market, while orders are scarce and inquiries few because of the heavy sales that were made in anticipation of a strike of the railway workers. Judge Anderson's decision on the check-off and the threats of labor trouble at the mines have so far failed to put any strength in the situation and prices have reverted to a basis that existed a month ago.

The end of the Lake season is bringing a readjustment of selling plans among the smokeless dealers, but prices remain fairly stationary, lump selling $4.25@$4.50; egg $4@$4.25; nut $3@$3.50; mine-run $2.25@$2.75, and slack $1.10 and up.

In addition to an overstock of all-rail coal the river interests, in anticipation of the railway trouble, loaded barges heavily and this coal must take an outlet from Huntington to Louisville. Kentucky lump was quoted at $3.25@$3.50, the latter being the top for block. West Virginia was $3 with some sales at $2.75. Run of mine was still quoted $1.65@$1.85 with some spot sales at $1.50 and under. Kentucky slack was selling 80c. and up, with the low on West Virginia around $1.10.

The first of the month saw little or no change in the retail market with the same prices that have been in effect since mid-August. Smokeless lump is $9.50@$10.25; mine-run $7.50 and slack $6.25. Bituminous lump is $7.25@$7.75; mine-run $6.25@$6.50 and slack $4.50@$5.50.

CLEVELAND

Strike Prospects Loom as Market Factor—Stocks Sufficient to Act as Temporary Buffer—October Lake Movement Larger.

The coal strike which has already commenced to spread into the Ohio fields from Indiana looms as the overshadowing market factor in this district. The moment operators of the mines in the Ohio regions decided at a conference in Cleveland last week to abide by the letter of Judge Anderson's decision and withhold the check-off, a strike was certain. Nothing can avert it but a reversal of the Anderson ruling.

Confronted with the possibility of drastic curtailment of output, this district, curiously enough, finds itself in better shape with respect to stocks of coal than it was before the middle of October. With the calling of the railroad strike the demand for coal became brisker, industries accumulating substantial stock piles. This supply is far below normal but it is above what has been seen in recent months. Designed for the railroad strike, it may serve as a buffer for an unexpected coal strike.

Leading factors in the trade estimate that there are sufficient supplies of coal on hand in various places in this district to last for from three to four weeks.

The effect of the prospective coal strike is just beginning to be felt but its influence will grow rapidly if the walk-out is not stopped. Within two weeks, it is estimated, supplies will be doled out to purchasers and prices naturally will move upward.

With the calling off of the railroad strike the demand for both retail and industrial coal slumped considerably. The spell of warm weather has helped to retard the retail demand. General appreciation of the situation on the part of the public is causing a quickening of demand again and retail prices are certain to rise within a few days if the situation remains unchanged. Dealers have well filled yards, but a cold snap coupled with the shutting off of new supplies would soon result in barren yards.

The movement of coal up the Lake during October amounted to 2,750,000 tons, compared with 4,693,000 tons in October, 1920, and 2,295,000 tons in September. As was expected, the move ment bulged somewhat last month due to the ending of the lower freight rate for Lake coal on Oct. 31. There is expected to be 1,000,000 tons taken up the Lake in November, compared with about 3,500,000 in November, 1920. The grand total for the current season will reach 22,000,000 against 23,667,000 last year.

Bituminous coal receipts at Cleveland for the week ended Oct. 29 for industries and retail dealers again registered a high mark, being the largest quantity during any week since the latter part of January. Total receipts amounted to 1,741 cars, divided: Industrial, 1,159 cars; retail, 572 cars.

South

BIRMINGHAM

Little Activity in Either Steam or Domestic Markets—Industrial Demand Weak—Prices Firm—Production Slightly Increased.

General conditions continue very unsatisfactory. There is little demand for steam grades, and no orders are being booked except for small tonnages for early delivery. Steam users are confining their orders to a supply for immediate requirements only.

Rehabilitation in industrial lines has been slow and has not yet reached the stage where it will be reflected in any greatly increased need for coal. Users are no doubt holding off and stinting themselves as much as possible in the hope of getting more equitable freight rates later on, saving in their fuel costs in this way. However, there appears to be small prospect of relief from this direction any time soon.

Quotations have changed very little in the past few weeks and the range is shown in the Weekly Review.

Domestic coal is now proving a drag on the market as the weather continues warm and unseasonable. Wagon mines in the Birmingham district are doing the bulk of business in the city, and regular dealers are experiencing very dull times. Shipments from the mines, in a large measure are going to outside territory, to the larger cities and towns in Alabama and adjoining states served by this field.

Practically all the coal-carrying lines in this district are short on equipment and the mines are already experiencing delays due to car shortage. As yet the output has not been seriously hampered by this shortage of equipment.

LOUISVILLE

Slow Business Follows Rail Flurry—Miners' Threat May Be a Market Factor—Prices Weaker.

If it isn't the railroads it is the miners or Federal agencies trying to control prices, but there is always some fly in the ointment which prevents the coal trade from moving along smoothly and steadily. For some time there was a forced demand in view of the threatened rail strike. When this was settled the market became lifeless on steam grades, and not especially active on prepared. Now with the miners threatening to strike, and many out already in Indiana, it is believed that the market may again react, but as a whole the trade feels that it would be much better if there were not so many spasmodic buying periods.

Some of the jobbers claim that business is about as dull as at any period during the year, due to the fact that they stocked up small steam consumers, retailers, etc., prior to the threatened rail strike, and are unable to develop new business at this time.

Colder weather is resulting in a slightly better demand on the retailers. Most of them, however, have fair stocks on hand and are not buying much to fill in.

Retailers are maintaining prices very well on prepared, asking $8@$8.25 for lump from eastern Kentucky and West Virginia and $6.75@$7 for western Kentucky lump. Steam is being sold at most any price, as there is keen competition for small steam plant business.

Producers claim that indications are for a slow and draggy period until after the first of the year at least. Many mines are down entirely, finding it unprofitable to operate with steam demand so poor.

West

DENVER

Production Nearing Normal—Market Improves.

Tonnage for the week ended Oct. 15 was 240,000 tons of a possible full-time output of 324,000 tons and, for the first time since the middle of last January, equalled the weekly output of the corresponding period in 1920. The output in the middle of January was 265,000 tons for the week, showing that Colorado is rapidly getting back to normal production as winter begins.

Louisville lignite lump is bringing $5.75 at the mine and $9.75@$10 retail. Sales are improving. Slack is finding a better market, selling for $1.80@$2.15 delivered, based on a wholesale price of $1.00@$1.25. Weld County lignite lump is steady at $4 at the mine and $7.50@$8 retail.

Bituminous lump is bringing $6 at the mine in both the southern Colorado and the Routt County fields. southern Colorado coal retailing for $10.75 and Routt County $11.50@$11.75. Nut coal is 50c. cheaper.

Colorado was prepared to meet the exigencies that might have arisen if the railroad strike had become a reality. Governor Shoup had appointed a personal advisory committee, among whom was David W. Brown, president of the Rocky Mountain Fuel Co.

News From the Coal Fields

Southern Appalachian

CONNELLSVILLE

Market Has Turned Soft—Production Outdistances Requirements—Coal Prices Decline.

The Connellsville coke market has become altogether inactive, and prices have weakened somewhat. Throughout the trade it is plain that merchant ovens have been blown in somewhat more rapidly in the past few weeks than required by such increase in the number of active blast furnaces as has occurred. One thing that misled operators was the inquiring of a number of furnace men for coke prices, when as a matter of fact they have not since blown in.

The postponement was due either to it being found more difficult than was expected to sell pig iron, or to a desire to await freight rate reductions on coke and limestone. Incidentally, there has been a distinct decrease in the demand for foundry coke.

Production of pig iron in the country as a whole increased 22 per cent from September to October, but the Connellsville region did not get the full benefit of the increase, for a number of furnaces have blown in on byproduct coke obtained from steel works with surplus coking capacity at present. Should the steel industry have occasion to operate at 75 or 80 per cent, the coke would no longer be available and the furnaces would have to revert to Connellsville.

Another factor is a decrease in the demand for Connellsville coal, which hitherto has brought better prices than wnen converted into coke.

The market is quotable as follows, with a weak undertone: Spot furnace, $3.25@$3.35; contract furnace, $3.35@$3.40; spot foundry, $4.25@$4.75.

The *Courier* reports production in the week ended Oct. 29 at 21,520 tons by the furnace ovens, and 43,680 tons by the merchant ovens, a total of 65,200 tons, an increase of 2,690 tons.

PITTSBURGH

Operators Discontinue Check-Off—Market Turned Inactive—Slack Prices Lower.

After careful but prompt deliberation following Judge Anderson's injunction against continuance of the check-off, the Pittsburgh District coal operators formally notified District No. 5, United Mine Workers, that they would no longer observe the check-off. The next pay day is Nov. 12.

At this writing the question has been shelved until Nov. 16. On that date there will be a further hearing by the Chicago court and in the meantime it is expected that operations will continue.

While the matter was considered from all possible angles, the operators regard the question as a very simple one, that an injunction has to be obeyed, whether or not there is prospect of its being reversed by a higher court, and that a feature in a contract cannot properly be carried out if it is illegal, other parts of the contract not being affected. The operators simply notified the miners that they would hereafter refuse to observe Rule 26 in the local scale, pertaining to District No. 5.

It is no secret that, irrespective of the recent injunction, the majority of Pittsburgh operators have for some time past been strongly opposed to continuing the check-off in the new scale, to prevail after March 31 next.

The market has turned altogether inactive and there has been practically no new business done in the past week. Such production as occurs is almost wholly against contracts or other term arrangements. Prices for mine run and screened are not quotably changed but have again become practically nominal. Slack, produced in filling contracts for screened coal, has become a drug on the market and has been offered down to $1.25 in some cases.

We quote steam and gas coal: Slack, $1.30@$1.50; mine run, $2.10@$2.20; ¾-in., $2.60@$2.70; domestic, 1¼-in., $2.90@$3.25, all per net ton at mine, Pittsburgh district.

CENTRAL PENNSYLVANIA

October Production Gains — Demand Slumps After Rail Scare—Prices Temporarily Firm.

October production showed a very substantial gain over September. There were 67,400 cars loaded in October against 55,764 in September. This represents a production of 3,740,000 tons as against 3,196,200 for September.

The field is now producing 75 per cent of capacity under normal conditions. October proved to be the second best month in the year, being exceeded only by February when the output was 3,800,000 tons.

When the railroad strike failed to materialize, the market in the Johnstown District suffered a slump from the increased activity which developed during the ten days previous to the calling off of the strike.

The car shortage which developed on the Baltimore & Ohio disappeared because the shipments from that field fell off. Prices which took a slight jump have not receded with the declining demand, but it is only a question of time as to when these prices will drop again.

UNIONTOWN

Spot Furnace Offerings Increase—Prices Weaken—Inquiries Withdrawn—Car Shortage Disappears.

The coke market, which for the past two months has been steady, has taken on a decidedly different outlook and is inclined to be spotty. This was brought about for the most part by the strike talk by the railroaders, which discouraged buying by consumers.

The sudden withdrawal of inquiries affected the market, considering that the operators had been receiving increased demands for their products daily. As a rule, operators have kept production within the lines of demand, but the action of the buying interests in withdrawing their inquiries was not foreseen and this week has found more offerings in the open market than usual.

Sales have been recorded at $3@$3.25 but there has not yet been sufficient tonnage passed to definitely establish a market at the lower level. A number of operators, however, feel that since the strike has been decided the market will recover rapidly. Instead of seeking a lower level it is predicted that upon recovery from the present situation, the coke market will again commence its upward trend. The reaction in the furnace market is not reflected in the foundry trade, quotations being $4.24 @$4.50.

The car shortage of last week seems to have disappeared, full requirements being placed this week. Last week the car placement left much to be desired, mixed equipment being given a number of plants.

ANTHRACITE

Production Heavy—Glen Alden Mines Resume—Bituminous Strike Would Move Steam Stocks.

Production continues to be heavy. A religious holiday last week interfered with the work. The week before production was reduced due to the observance of Mitchell Day.

The Glen Alden Coal Co. resumed operations at the six collieries that have been closed down since Aug. 27th. This will bring the production of coal in the anthracite region to a higher figure than it has been for some time.

The fire in the Hollenback Mine of the Lehigh and Wilkes-Barre Coal Co. has so damaged this operation that it will be months before it can fully resume operations.

If there is a bituminous strike the market for steam sizes will be greatly increased and the present large stock reduced. Family sized coals continue in active demand.

EASTERN OHIO

Demand Low, Following Rail Settlement—Car Shortage Affects Output—Lake Trade Closing.

Still further gains in industrial activity have been noted during the week. In the coal trade stimulation continued and a maximum weekly tonnage output would again have been registered had not an appreciable car shortage developed. The output for the week ended Oct. 29 was 412,000 tons or approximately 66 per cent of the total rated capacity of the field. The tonnage mined was 43,000 tons less than the previous week. The car shortage was most serious on the B. & O., namely about 25 per cent. Car shortage on the other lines was less than 10 per cent.

Production figures for the year indicate that the aggregate output amounts to 14,839,000 tons as against the potential capacity of 26,900,000 tons, or 56 per cent of capacity. The quantity of coal going to the carriers for fuel was reduced somewhat during the week, but notwithstanding this the railroads are taking between 30 and 35 per cent of the output at the present rate of production. Association mines worked 50 per cent of possible work-time and tonnage mined was well above 60 per cent of rated capacity.

Since the settlement of the railroad controversy, operators say that inquiries from manufacturing plants and other consumers of coal have diminished and coincident with this situation, there has been a slight softening in spot prices. It is now conservatively estimated that industries and public utilities have a four to six weeks' stock of fuel on hand and also that retail yards are pretty well supplied for immediate needs.

In the Lake trade the usual cleanup is being made; there is a letting up in receipts and the stock on hand at lower docks is being reduced. Receipts are averaging around 1,500 cars daily. Last week the fleet loaded 571,902 tons which was a big decrease compared with the same week last season when the dock dumped 1,076,497 tons. Shipments for the season up to Oct. 24 were 20,197,000 tons as compared with 1920, 18,549,344 tons; 1919, 20,528,813 tons, and 1918, 25,108,114 tons.

UPPER POTOMAC

Idleness Still General — Competition Too Keen—Contracts and R.R. Fuel the Mainstay.

The last week of October brought no change in the situation in this territory, and general dullness still reigned. The competition of lower prices kept many mines inactive, hence spot business was extremely scarce even for those in operation. Contract orders plus a small volume of railroad fuel were the mainstay of production.

FAIRMONT AND PANHANDLE

Production Drops—R.R. Fuel Loading Is Heavier — Western Markets More Active.

FAIRMONT

Production slumped a trifle during the last week of October. Only a portion of the mines in the northern part of the state were in operation. However, the mines actually running were producing more heavily than earlier in the month. Lake shipments were light, but the movement to Curtis Bay picked up slightly. Prices were unchanged.

NORTHERN PANHANDLE

Railroad fuel constituted the bulk of production, but such an output was confined to comparatively few mines. Commercial loadings were light, with the exception of domestic coals. Railroad coal buying was on the open market. Much of the product was moving West and very little coal was being consigned to the Lake.

Middle Appalachian

LOW-VOLATILE FIELDS

Car Shortage Loss Heaviest of Year—Production Slumps with Failure of Rail Strike Threat—Western Markets the Best.

NEW RIVER AND THE GULF

During the early part of the week ended Oct. 29, there was a larger production than usual in the New River field. The output dropped fully 50 per cent after it became apparent that there would be no railroad tie-up. Aside from such a condition the spot demand for domestic, coupled with contract orders, was all that tended to keep up the output. Export business was still largely lacking.

Car shortage was an important factor of lost time in the Winding Gulf region, making it plain that trouble might be anticipated from this source later on. Production, which was about 55 per cent of capacity, had been increased because of the impending railroad trouble, hence a drop in tonnage mined was in order after the settlement of the strike threat.

POCAHONTAS AND TUG RIVER

Car shortage losses jumped to about 80,000 tons in the Pocahontas region, the biggest loss of the year in that respect. It is becoming increasingly apparent that as conditions continue to improve operators will be handicapped by the inability to secure sufficient equipment. Domestic coal found a ready market but slack failed to improve its position.

Tug River production hovered around 100,000 tons, with a very large movement to Western markets. There would have been a larger output, however, had more cars been available. Better takings by the steel mills stimulated production, although prices were unchanged.

HIGH-VOLATILE FIELDS

Market Dullness Returns—Car Supply Becoming Uneven—Domestic the Only Mainstay.

KANAWHA

There was a sudden drop in production as soon as it became apparent that there would be no railroad strike, although at no time had such a prospect caused any unprecedented increase in demand. The spot market was as dull as ever during the week ended Oct. 29, the only call being for domestic lump. Very little coal was being moved to Tidewater, and as the month drew to a close Lake shipments dwindled. Western markets took the bulk of production.

LOGAN AND THACKER

Logan production was also affected by the announcement that there would be no rail strike. A part of the heavy tonnage recently produced was for railroad fuel purposes, although Lake shipments were also heavy. Lump was in fairly strong demand, prices ranging around $3.50. The Tidewater movement was not improved.

Williamson mines were working about two days out of the week with a car shortage affecting production to some extent. The greater part of the output was moving West, much of it on contract, and there was very little improvement in the spot market.

VIRGINIA

Production reached more than 60 per cent of capacity during the week, that being the best figure for the year. Even prior to the railroad strike agitation inquiries were becoming more common. However, consumers seemed unwilling to pay what was regarded as a fair price.

NORTHEASTERN KENTUCKY

The output reached 50 per cent of capacity during the week, domestic demand leading the market, although steam coal was also in a better position. Failure of the railroad trouble to materialize made little difference in operating conditions, as there had not been much increase in production in anticipation of such trouble.

Middle West

MIDWEST REVIEW

Check-Off Injunction Causes Market to React—Steam Prices Advance—Non-Union Producers Refuse to Quote Futures.

Operators and wholesalers who are closely in touch with the labor situation are decidedly worried, as it is thought that trouble of some sort will eventualize in the check-off controversy. In coal circles it is believed that a strike is inevitable. Outside of the coal trade, the general public appears to consider the strike talk purely propaganda, cleverly arranged in order to stimulate sales.

Operators are wondering, in the face of these conditions, what to do in regard to the prices on their coal. Some producers have not increased the prepared or domestic prices at all, but have raised their quotations on steam coals. Domestic coal has been selling at a fair price all summer and fall, whereas steam has been going at figures considerably below cost. Some operators are refusing to make any quotations whatever, preferring to sit tight and work on their old orders until the situation gets more definite.

There surely has been plenty of excitement in the coal trade during the past few weeks. It was no more than a few days ago, shortly after the railroads dispelled any chance of a strike from that quarter, that the market on steam coals slumped very sharply. It is only two or three weeks ago when screenings from Indiana and Illinois were being sold 70c@$1.25. At the height of the agitation over the railroad situation, the price went up to $1.75 and in some isolated cases to $2. When the threatened strike was smoothed over and settled, steam coals took a sharp and quick slump, some falling as low as $1.25. Now comes the talk of the strike of the United Mine Workers, and prices on steam coal have promptly reacted. We heard of several large operating companies with big tonnages of southern Illinois coal, who have put the price of their screenings up to $2.85. Whether they will have an opportunity to sell at this price remains to be seen.

In the meantime, coal wholesalers are fully awake to the situation and have been attempting to buy coal in large quantities from the non-union fields. Non-union operators, however, realize what is in the air and in a great many cases have refused to book orders except on a basis of price current at time of shipment.

One or two of the larger railroads serving the Middle West are going to be caught short. One railroad has just stepped into the market and bought twenty-five cars per day for the next month or so. For this coal they have to pay a premium of fifteen cents a ton over the last price they paid. Other roads have but little coal on hand, in fact, one of the largest of them has only a supply of twelve days to two weeks.

Out in the country the threatened strike has had no effect whatever. Retail dealers look at their bins, find them full and appear not to care whether a strike comes or not. The attitude of the dealer is the same as that of the steam buyer. They all think they have considerable coal on hand and are willing to take a chance before buying more at any material advance in price. In all due fairness it must be said that the operators and wholesalers are planning on keeping their prices at reasonable levels, as it is considered that a runaway market would be the worst possible thing that could happen to the coal industry at this time. The advance which has taken place in steam coals is merely normal, as the operators who have advanced their prices are taking advantage of the situation only to bring their steam prices to where it can be sold at a small profit.

WESTERN KENTUCKY

Demand Fair for Prepared, but Screenings Very Draggy — Prices Weak — Operating Conditions Undisturbed.

With the removal of immediate demand during the period of buying in preparation for a rail strike the steam market has been much weaker, but now that many mines are down in Indiana over the miners' trouble, and the country is stirred up over the matter, it is beginning to look as though there may be another period of forced buying.

Recent reports indicate thousands out of work in Indiana as a result of strikes over the check-off matter. So far Kentucky has not been affected, and it is hardly believed that there will be any disturbances in the field.

Demand is still good for prepared coal, the weather being colder, but screenings are weak, and mine run is not showing much activity. Some western Kentucky screenings are selling as low as 40c. a ton, while the top on nut and slack is about $1.25. Mine run is holding fairly well at $2 and upward to $2.40, while prepared is firm at $3@$3.50.

Car supply is good, labor is plentiful, and it is merely a matter of securing business enough to give the mines a semblance of real activity.

SOUTHERN ILLINOIS

Decided Slump in Domestic — Steam Dragging — Car Shortage Felt — Railroad Tonnage Light—Prices Tend to Weaken.

The situation in the Carterville field is entirely changed from what it was a week ago. The steam market has retained greater strength than the domestic, but it does not, of course, measure up to where it should be under normal conditions. There seems to be no great surplus of steam sizes on account of the dropping in the domestic demand.

Railroad tonnage has eased up and there is a car shortage in this field accounted for by the reason that several thousand cars are tied up with storage coal, which accumulated in anticipation of the railroad strike. Mines are working about three days a week.

In the Duquoin and Jackson fields somewhat similar conditions prevail. Working time in the Duquoin field does not show up as good as in Carterville and railroad tonnage seems lighter.

In the Mt. Olive field the demand has eased up some and domestic tonnage has been curtailed. A good tonnage is moving to Chicago, Omaha and Kansas City, both steam and domestic. Steam, however, is mostly on contract. Steam ranges $1@$1.25 for screenings. Mines average from three to four days a week.

In the Standard district things have toned down some, but here and there a few operators are trying to maintain war-time schedules. Operators

of Coulterville are asking $4 for domestic sizes because they apparently are oversold. The average, however, ranges $3.25@$3.50.

Railroad tonnage dropped off considerably. No bills show everything from lump down to screenings as having no market. A few mines are still idle on account of their inability to produce coal at the prevailing price.

West

WASHINGTON

Production Increasing on Non-Union Basis—Domestic Market Active.

Production by the Pacific Coast Coal Co., the largest operator in this district, employing approximately 1,000 men, will probably exceed 35,000 tons for October. A gain in production has been noted each week following the reopening of the commercial mines of this state last August, when the operators severed all relations with the United Mine Workers. The best indication of the success of the undertaking is seen in the rapid increase in production, the total hoist at the mines in October more than doubling the total for September.

The domestic market continues active, with coal moving in increasing quantities at the reduced price announced several weeks ago. But little difficulty has been experienced with the strikers beyond the annoyance of union pickets and the constant haggling of the non-union men, the operators report. The coal companies are now endeavoring to secure court orders evicting the strikers from the houses owned by the operators, which have been occupied by them since last March when the strike went into effect.

UTAH

Domestic Markets Rally — Production Increases—Outlook Improves.

For the first time in many months, dealers in the larger cities report that orders are being received faster than they can take care of them. Production continues to increase and both dealer and operator are in a better frame of mind than they have been for a long time.

Dealers estimate that 32 per cent of the householders of Salt Lake City have put in their winter's coal supply and that there are now 165,000 tons in the yards. The rate of consumption during November and December is 1,500 tons a day.

News Items From Field and Trade

COLORADO

A coal land contest is on between the United States general land office in Denver and the State of Colorado over the proper classification of a section of school land near Durango. The State maintains the original government survey of this tract failed to show the presence of coal or other mineral in this land and that, therefore, the government forfeited its right of reservation of mineral deposits when title was transferred to the state.

ILLINOIS

The Western Electric Coal & Gas Co., in which Congressman Copley of Aurora is largely interested, has acquired option on some three thousand acres of land in Summerset and Lezan township in Jackson County, which is supposed to be underlaid with Big Muddy coal.

The Mt. Olive and Staunton Coal Co., of St. Louis, has excavated a large pit 30 feet deep, 400 feet wide and 400 feet long, south of Edwardsville which is being used as a storage pit for screenings. As fast as screenings are unloaded water is pumped in to cover them. It is estimated that between 40,000 and 50,000 tons of coal can be stored in this pit. The project is in anticipation of a strike next spring when this coal can be trucked on the hard roads to St. Louis, or loaded in nearby railroad cars.

The executive offices of the **Union Fuel Co.** are now located in the Reisch Building, Springfield. The consolidation of the executive and operating offices at Springfield will give greater efficiency of operation and enable the company to better serve its customers.

The Wisconsin Steel Works, South Chicago, has commenced the construction of a coal storage dock of from 75,000 to 100,000 tons capacity to serve its byproduct coke ovens.

The Freeman Coal Co., operating in Williamson County, purchased the Sunnyside mine at Herrin, which was owned by the **Chicago, Wilmington & Franklin Coal Co.** of Chicago. The mine has been shut down since last May and it is said that the new owners expect to put the property into operation at once. Included in the deal was 1,100 acres of undeveloped coal lands immediately joining the mine property. Mine B at Herrin, operated by the Chicago, Wilmington & Franklin Coal Co., was shut down immediately preceding the sale of the Sunnyside mine, throwing 400 miners out of work indefinitely. No date was set for the mine to resume.

It is reported that the Wabash railroad like many others are preparing to store 200,000 tons or more.

Harold D. Wright, formerly president of the Lincoln-Latham Mining Co., of Springfield, is now with the Republic Coal & Coke Co., of Chicago as vice-president of that corporation.

Robert M. Medill, director of the Department of Mines and Minerals of the State of Illinois, has been appointed chairman of Sub-Committee No. 4 of the Mine Rescue Standardization Committee. The Bureau of Mines, through the various committees is expected shortly to start practical work toward obtaining international standards governing the methods of using mine-rescue apparatus.

John S. Reiner, president of the Reiner Coal Co., Chicago, has returned to Chicago after an inspection trip through southern Illinois, looking at several properties which his company is contemplating taking over.

M. F. Smith, of Lincoln, has accepted a position as superintendent of a new mine now being sunk at Edwardsville. He was formerly with the Lincoln-Latham Mining Co., at Lincoln.

The Illinois Central R. R. has petitioned the Illinois Commerce Commission for permission to construct two industrial tracks in Franklin and Williamson counties. One of the tracks will run from the Christopher Branch to the Royalton Mines, a distance of four miles. The other will run from the same branch to the Lake Creek Mine, a distance of seven miles.

Following is the itinerary of the **Illinois Mining Examining Board** for the month of November:—Harrisburg, Nov. 1; Johnston City, Nov. 2; Benton, Nov. 3; Duquoin, Nov. 4; Centralia, Nov. 5; Collinsville, Nov. 7; Gillespie, Nov. 8; Nokomis, Nov. 9; Springfield, Nov. 14; Danville, Nov. 15; Canton, Nov. 16; and Peoria, Nov. 17.

Among the many mines in the state which are now reopening largely on account of the improved marketing conditions are: **Peabody Coal Co.,** at Stonington, **Springfield District Coal Mining Co.,** at Woodside and **Peabody Coal Co., No. 19,** at West Frankfort.

INDIANA

Phil Penna, secretary of the Indiana Bituminous Coal Operators' Association, attended the annual American Mining Congress convention in Chicago.

The Willis Coal Co. has been organized at Petersburg, with a capital stock of $20,000 for the purpose of mining coal. The organizers are A. O. Byers, John A. Byers, Cleveland Willis and Frank J. Berger.

A special train carrying twenty-five or more Chicago retail coal dealers and several officials of the Chicago, Milwaukee and St. Paul recently made a tour over the Terre Haute division, inspecting the coal fields surrounding Terre Haute tributary to the Terre Haute division of the road. The purpose of the trip was to promote the sale of Indiana coal in the Northern States. A year or two ago the Chicago, Milwaukee and St. Paul leased for ninety-nine years the "Walsh Road" as it was called, properly designated as the Chicago, Terre Haute and Southeastern. St. Paul officials expect to make a large coal carrier out of the Terre Haute division.

KENTUCKY

John Hoffman, president of the Kentucky Fuel Co. of Cincinnati, recently made a visit to the company's mines in Bell County, Ky., to get first hand information on the labor situation.

K. U. Meguire of the Harlan Coal Co. was in Pineville recently in connection with his suit against the Conant Coal Co.

E. K. Wilson, M. F. H. Wilson and C. K. Crawford have affirmed ownership of the **Diamond Jet Coal Co.**

The Boreing Land & Mining Co., Rowland, has changed its place of business to Stanford.

The Long Branch Coal Co., of South Dakota, has been authorized to do business in Kentucky, with headquarters at Ashland, having applied to the Secetrary of State for permission to operate as an outside corporation.

Henry LaViers, general manager of the Northeast Kentucky Coal Co., with headquarters at Paintsville, accompanied the Ashland Chamber of Commerce part of the way on its recent trip through the Big Sandy field.

Alex. R. Watson, of the C. L. & W. Coal Co. spent a few days in Kentucky recently on business.

The Rockcastle River Coal Co. has filed a petition of voluntary bankruptcy in the United States District Court, setting its liabilities at $22,976.41 and assets at $30,000.

The constitutionality of the act passed by the 1920 general assembly requiring corporations to furnish washrooms for employees is in question in the case of the commonwealth against the **Beaver Dam Coal Co.,** appealed to the Court of Appeals from the Ohio Circuit Court. The company was indicted for failing to comply with the law and the lower court sustained a demurrer to the indictment.

Schedules of the **Sun Coal Co.** filed in the court of Judge George DuRelle, referee in bankruptcy, show the company has assets of $119,000 and liabilities of $30,460. The liabilities consist entirely of secured claims of a number of creditors. The company lists among its asset $50,000 as the value of coal lands in Clay County; $48,000 worth of bills, promissory notes and securities; $12,500 worth of machinery and tools, and $9,000 in debts due on open accounts.

MINNESOTA

W. W. Broughton, president of the Pittsburgh Coal Co., visited Duluth recently to inspect the company's coal docks.

A fire in screenings on the dock of the **Clarkson Coal and Dock Co.** has caused considerable trouble. It is thought that the fire will be under control shortly.

The Superior Coal & Dock Co. and the **Maynard Coal Co.** have filed a mortgage in Duluth for $600,000 to the Central Union Trust Co. to obtain an issue of first mortgage gold bonds to cover the incidental expenditures necessary to the rebuilding of the company's dock.

MISSOURI

A contract was recently closed at a session of the penal institutions board at Jefferson City, whereby the penitentiary will shift from coal to oil as fuel for all purposes. Members of the board estimate that the change will save $75 a day in the fuel bill. The change will be made as soon as the necessary oil burning equipment can be installed.

E. J. Knickerbocker, who for the past six years has been sales manager for Central Coal & Coke Co., of Kansas City, has engaged in the wholesale coal business on his own account with offices in the Waldheim Building, Kansas City. Mr. Knickerbocker formerly was associated with the Monon Coal Co. at Chicago and prior to that put in many years of service as coal traffic R.R. In his new business he will handle coals from Franklin and Williamson counties and the Springfield district of Illinois as well as some coals from other Western fields.

The District office of the **Fort Dearborn Coal Co.,** located in the Dwight Building at Kansas City, has been discontinued. The territory will be under the jurisdiction of the main office at Chicago.

NEW YORK

Clarence White, who for some time was attached to the bituminous department of W. A. Marshall & Co., of 25 Beaver St., New York City, assumed the duties of manager of bituminous sales for Whitney & Kemmerer, at 143 Liberty St. on Nov. 1. Mr. White succeeds **C. A. Bill,** who recently became manager of sales for George D. Harris & Co.

Geo. M. Carpenter, Jr., president of the New York Coal Export Co., Inc., has returned after a month's trip in Europe spent in surveying the foreign conditions of the export coal trade.

The Penn-Empire Coal, Inc., of Pittsburgh, has opened a Buffalo office with A. E. Yalyowitch, manager of the Buffalo Traffic Bureau, as local representative.

J. A. Hill, president of the Knickerbocker Fuel Co., has sailed for Europe. Mr. Hill was fuel administrator for the American forces abroad during the war.

The receivers of the **Tidewater Coal Exchange, Inc.,** upon dissolution, wish to advise that the exchange has left on hand a limited quantity of Classification of Mines No. 1, issued March 15, 1921, and Supplement No. 3 thereto, issued June 18, 1921, copies of which will be mailed to those interested, so long as the supply lasts, for the regular charge of 25c. per copy. The supply of Supplement No. 3 is very limited and can only be supplied with the classifications furnished on the orders first received.

OHIO

Roy Cox, an executive of the Kanawha Valley Coal Co., was in Cincinnati recently. Mr. Cox has his office at Charleston, W. Va.

Harry W. Eastwood, who has had charge of the steel mill and crane division of the Cutler-Hammer Mfg. Co., Cleveland branch, has been made branch manager, taking the place of Lynn B. Timmerman, who leaves to enter the automobile business in Lima.

Recovery of $314,730.74 for Pocahontas coal requisitioned by the Government from April, 1920, to February, 1921, is sought in a suit filed by the **Houston Coal Co.** in the federal court at Cincinnati. It is alleged in connection with the bringing of the suit that the Government fixed a price of $4 a ton when the same grade of coal was being sold to other customers for more.

All of the bids recently opened by the **Columbus Board of Purchase** for 11,000 tons of nut, pea and slack for various city departments have been rejected. The announcement is made that coal will be purchased on the open market for the time being.

Chapman R. Hinsch has taken charge of the Cincinnati office of the Interstate Coal and Dock Co. with **D. J. Henderschott** as his assistant. Mr. Hinsch was formerly in the wholesale coal business and Mr. Henderschott was with the Manhasset Coal Co., a West Virginia organization. This is in line with the reorganization of the company which has been going on under the receivership that was entered by the New York courts some two months ago.

Announcement has just been made of the appointment of **Edward G. Mathiott** as general sales manager of the Valley Camp Coal Co., the Elm Grove Mining Co., and the J. A. Paisley Coal Co., headquarters Cleveland, the general offices of these companies being located in the Kirby Bldg., Cleveland. Mr. Mathiott is well known in railroad and coal circles throughout the Middle West and before his affiliation with the Paisley coal interests several years ago, he was connected with the coal department of the New York Central at Cleveland and the Pittsburgh & Lake Erie at Pittsburgh. The Valley Camp Coal Co. and subsidiaries are large operators in Eastern Ohio and West Va., embracing an annual capacity of some six million tons.

PENNSYLVANIA

J. C. Townley, formerly district manager of the Pittsburgh office of the Cement Gun Co., Inc., has sailed for Holland, where he will take up his duties as general manager of the International Cement-Gun Co., recently organized to handle the foreign business for the Cement-Gun Co., Inc. The address of the company is 50 Maria Plaats, Utrecht, Holland.

Campbell, Peacock & Kinzer, operating mines at Wehrum, Heshbon, Clayboro and other points in Indiana County, will abandon one of the operations at Heshbon, and will move the equipment to Osceola, Clearfield County, where a tract of 500 to 600 acres recently acquired by the company will be developed on an extensive scale. The company expects to develop this tract to a capacity of 750 tons per day. The general offices of the corporation are in Philadelphia with a branch in New York.

The Southern Coal & Iron Corporation has taken over, under lease, with the option to purchase, the 600-ton electrically equipped Simpson Breaker, the Ainsley anthracite mines and the Tipperary anthracite mines, all located in the Scranton district. The corporation intends to put these properties into immediate operation, under the direction of Murray B. Courtright, of Courtright, Dimick & Co., coal operators, of Philadelphia and New York.

W. C. Dobbie, in charge of operations of the Jamison Coal & Coke Co. in West Virginia was a recent visitor in Pittsburgh.

The Bureau of Mines is prepared at its Pittsburgh experiment Station to conduct tests of motors and their electrical accessories, such as are used in gaseous mines to operate conveyors, coal-cutting machines, electric drills, pumps, coal-loading apparatus ,and similar equipment, for the purpose of determining the permissibility of such motors and their accessories and approving them as permissible for use in gaseous mines or dust-laden atmospheres.

Copies of Schedule 2-B, "Procedure for establishing a list of permissible electric motors," may be obtained by addressing the Director of the Bureau of Mines, Washington, D. C.

The properties of the **McTurk Coal Co.,** near Girardville, are now being operated by the **Madeira-Hill Coal Co.**

J. M. Humphrey, president of the Lehigh Valley Coal Co., announces that **A. C. Stahl,** heretofore acting mining engineer for the Lehigh Valley and for Coxe Brothers & Co., Inc., has been appointed mining engineer.

A charter has been issued for the **Fersol Smokeless Coal Co.,** of Connellsville. The company has a capital stock of $50,000 and O. S. Ferren, Connellsville, is treasurer. He, with H. B. Brown and W. R. Long, of Connellsville, incorporated the company.

The Meyersdale Smokeless Coal Co. has notified the State Department at Harrisburg of an increase in its capitalization from $10,000 to $188,000. Robert Williams, Somerset County, is president.

UTAH

The Great Western Coal Mines, the **Gordon Creek Coal,** the **Equitable Coal** and the **Salina Coal** companies have received permission from the Utah State Securities Commission to sell their stock. The Great Western company has a capital of $3,000,000. The Gordon Creek company has a capital of $100,000. The Equitable asked for authority to dispose of 5,000 shares of its stock at a par value of $10, the total shares of the company being 50,000. The Salina company received permission to sell $50,000 worth of the company's $500,000 bond issue in Utah on conditions set forth in the bond which makes it subject to redemption at 105 per cent of the principal amount with accrued interest after Jan. 1, 1922 or any interest date prior to its maturity on the first day of July, 1931.

WASHINGTON, D. C.

The suit of **W. C. Atwater & Co.,** of New York, to recover $73,064 under a Navy coal contract has been argued in the Court of Claims. The company alleges that the Navy required it to furnish 19,990 tons in 1916 at $2.80 a ton, in excess of 200,000 tons which were contracted for, and that this extra 19,990 tons should be paid for at the rate of $6.50 a ton. The Government argued that the contract required the company to deliver any quantity of coal needed for the navy from July 1, 1916, to June 30, 1917. The coal in question was steaming coal, and was delivered at Hampton Roads.

Secretary of War Weeks has directed that the wet storage of coal for the Navy at the Panama Canal Zone shall be discontinued. He directs the canal authorities to seriously consider the practicability of the operation of the Cristobal and Balboa plants on an 8-hour day basis making the price of coal the same at Balboa as at Cristobal, northbound ships being permitted to transit the canal and coal at the northern terminus, Cristobal, and southbound ships proceeding through the canal and coaling at the Pacific terminus, Balboa.

The House Committee on Public Lands has reported a bill for agricultural entries on coal lands in Alaska. It provides that the right to mine and remove coal shall be subject to laws applicable to Alaska. It limits surface disposition of coal lands in Alaska to homestead claims initiated by actual settlers. It provides that any person qualified to acquire coal deposits or the right to mine and remove the coal shall have the right at all times to enter upon the lands entered or patented for the purpose of prospecting for coal on approval of a bond to the Interior Department as security for payment of damages to crops and improvements on the land. Persons acquiring from the United States coal deposits on such land or the right to mine or remove the same may reenter and occupy so much of the surface as may be required for purposes reasonably incident to mining and removing the coal, and mine and remove the coal upon payment of damages caused thereby to the owner. The bill does not authorize the exploration upon or entry of any coal deposits withdrawn from exploration and purchase.

WEST VIRGINIA

J. K. Dering, president of the J. K. Dering Coal Co. of Chicago, was recently in Charleston.

C. L. Menager, cashier of the Smokeless Fuel Co. of Charleston, was a visitor in Eastern cities recently.

In a party of coal men who enjoyed a hunting trip in the mountains of West Virginia recently were **Quin Morton** of the Wood-Morton Fuel Co.; **G. H. Caperton,** president of the Smokeless Coal Association and also of the New River Coal Co.; **Harry M. Hall of the Ft. Dearborn Coal Co.,** and others.

Capitalized at $200,000 the **Nagola Coal Co.** has been organized, with headquarters in Huntington. Among those actively identified are: A. D. Cronin, Detroit; G. R. Williams, Thomas E. Jeffries, L. T. Pope, B. L. Douglas, all of Huntington.

By the end of September the casualty rate in West Virginia had been reduced to twenty-five a month. As is usually the case, nearly half of the deaths in West Virginia mines during September were due to falling roof coal, etc., the deaths from such a cause amounting to eleven. There were five mine car accidents, two motor car accidents, two deaths from explosives, one death from electrical shock and one death in a shaft, so that only three deaths occurred outside the mines.

A joint meeting of the stockholders and directors of the **Mineral County Coal Co.** was held recently. The new organization consists of the following officers and directors: H. L. Arnold, president; Emory Tyler, vice-president; Miss Margaret Gilmore, secretary and treasurer; H. C. Hodges, attorney in fact. On the board of directors are R. W. Thrush, R. E. Wiseman, Henry F. Burgess, Oscar Cosner, Mrs. Beulah Wells, H. L. Arnold and Emory Tyler.

It is understood that **R. B. Isner,** general manager of sales of the Boone County Coal Corporation, with headquarters at Sharples, has resigned to accept a similar post with

the Old Dominion Coal Corporation at Charleston.

Charter of incorporation has been issued to the **Pigeon Creek Mining Co.**, of Burch, Mingo County. The capital stock is $100,000 and the incorporators are K. S. McClanahan, William McClanahan, of Burch; C. R. McNutt, J. R. Hatcher and W. J. Elliott, of Princeton, Mercer County.

The Beard Smokeless Coal Co. has been taken over by its creditors. The headquarters are at McVey. This company has been operating on a lease of 500 acres and had an investment of approximately $150,000. It is generally believed in Winding Gulf coal circles that the stockholders will have no difficulty in so reorganizing and getting the company back on its feet.

In preparation for the time when it may not be possible to secure an adequate car supply, the **Gulf Smokeless Coal Co.** has under construction a storage bin, adjoining the tipple of the plants at Tams. Construction work is about completed and the company will be able to use it in the near future.

Further development of the Pond Creek territory is presaged by the organization of the **Bailey Pond Creek Coal Co.**, the headquarters of which will be at Williamson, this company having a capitalization of $125,000. Active in organizing the new company were L. B. Saunders, W. J. Bailey, M. P. St. Clair, Fred Bailey and R. G. Bailey, all of Williamson.

John Brydon and associates who recently purchased the old plant and property of the **Potomac Coal Co.**, near Frostburg, have begun the work of preparing the mine to be reopened, having a large force of men at work.

F. C. Colcord, in charge of the operation of the Colcord Coal Co. at Montcoal, was a recent visitor in Charleston.

Recent issues of coal mining charters are as follows: **Cobun Hill Coal Co.**, Tunnelton, capital, $250,000, by H. C. Miller and others; **Fielder Coal & Coke Co.**, Morgantown, capital, $250,000, by Stanley H. Fielder and associates; **Maine Collieries Co.**, Morgantown, capital, $1,000,000, by M. L. Taylor and others; **Equitable Coal Co.**, Morgantown, capital, $150,000, by C. M. Lyons and associates; **Mineral County Coal Co.**, Keyser, capital, $250,000, by H. C. Hedges and others; **Bear Mountain Gas Coal Co.**, Flemington, capital, $200,000, by West Virginia and Pennsylvania operators.

Percival Johnson, president of the Pulaski Iron Co., with headquarters at Philadelphia, was inspecting the properties of his company in the Pocahontas field and the iron properties of the company in Pulaski, Va. recently.

BRITISH COLUMBIA

BRITISH COLUMBIA COAL PRODUCTION IN SEPTEMBER, 1921

Vancouver Island District

Mine	Tons
Canadian Western Fuel Co.	68,470
Canadian Collieries (D) Ltd.:	
Comox	37,952
South Wellington	7,802
Extension	19,016
Nanoose Wellington Collieries	5,733
Granby Consolidated M. S. & P. Co.	22,374
Old Wellington (King & Foster)	604
Total	161,951

Nicola-Princeton Collieries

Middlesboro Collieries	5,311
Fleming Coal Co.	3,444
Coalmont Collieries	7,604
Princeton Coal & Land Co.	1,666
Total	18,025

Crow's Nest Pass District

Crow's Nest Pass Coal Co.:	
Coal Creek	37,459
Michel	25,259
Corbin Coal & Coke Co.	6,226
Total	68,944
Grand total	248,920

Production in the province shows little variation when figures for September are compared with those of the previous month. In the Crow's Nest Pass there were smaller tonnages produced at Coal Creek Collieries and at Corbin, while at Michel there was an increase. On Vancouver Island the output was kept at practically the same mark, while in the Nicola-Princeton Field there was some decline. Production for August was 252,677 tons, while in September it was 248,920 tons.

ONTARIO

The plant and equipment of the **Anthracite Briquette Co.**, Ashbridge's Bay, Toronto, has been purchased by the **Financial Underwriters, Ltd.**, of that city. The company was owned by A. E. Gooderham and associates. Under the new management a briquette made by the Dutch oil process similar to Nukol, will be produced. In all probability the newly acquired plant shortly will be added to the assets of the **Nukol Fuel Co.**

Traffic News

Hearing in the case of the **Consolidation Coal Co., scheduled** for Washington Nov. 14 has been postponed to a date to be hereafter fixed.

In a brief submitted to the I. C. C. by the **Dayton Malleable Iron Co.**, in its pending case, it is contended that the combinations of local rates between mines on the Kelly's Creek and Northwestern R.R. and Ironton, Ohio, are unreasonable because they exceed by more than 8c. a ton the rates from points on the C. & O. in the Kanawha District.

The Interstate Commerce Commission has suspended until March 27 proposed reductions of 28½c. per ton on bituminous coal, lump and slack, from mines on the **Missouri, Kansas and Texas Ry.**, in Missouri, Kansas, Arkansas and Oklahoma to Kansas City, Mo., and contiguous points.

The Louisville & Nashville R.R., on Nov. 25, will put into effect through rates now being published from Louisville & Nashville western Kentucky mines to points on the Grand Rapids & Indiana, Pan Handle, Monon and Pennsylvania roads in Central Freight Assocation territory.

The I. C. C. has suspended until Dec. 19 the proposal of the B. & O. to eliminate the application of the present rates on coal from Western Maryland Ry. mines to points on the B. & O. and its connections over the route through Cherry Run, W. Va., and Westport, Md., making applicable instead combination of locals via these routes, and establish instead in connection with the present through rates, specific routing via Cumberland and Bellington, W. Va.

The Ashland Coal and Iron Ry. Co. of Kentucky has asked the commission for authority to issue a four-months' note or notes for $180,000 to discharge an open account with the Ashland Iron and Mining Co.

In the complaint of the **Washington Steel and Ordnance Co.**, the commission decides that the rates on bituminous coal from the New River, W. Va. fields to the plant of the Company at Uniontown, D. C., are not unreasonable.

In the complaint of the **Hydraulic Press Brick Co.**, an I. C. C. examiner recommends that rates on bituminous coal from certain mines in the Clinton and Brazil districts in Indiana to Bristol, Ind., during Federal control were not unreasonable.

Hearing in the case involving coal rates from Wyoming mines to stations in Utah scheduled by the commission at Salt Lake City Nov. 21 has been postponed to a date to be announced later.

The Western Pacific R.R. will reduce the rate on bunker coal from Utah mines to San Francisco and Oakland to $6 per ton. The present rate is $7.25 per ton. This reduction will not affect coal for domestic use.

Association Activities

Southern Coal Merchants' Association

A new association known as the "Southeastern Coal Merchants' Association," was formed recently. Prominent coal merchants from the states of Alabama, Florida, Georgia, North Carolina, South Carolina and Tennessee met at Atlanta, and organized the new association, with the following officers: J. A. Yarbrough, Charlotte, N. C., president; C. M. Farrar, Augusta, Ga.; W. T. C. Berlin, Memphis, Tenn.; J. W. Mallory, Anniston, Ala.; B. Elias, Ashville, N. C., and H. R. Tuger, Greenville, S. C., vice-presidents; and J. W. Hancock, Marietta, Ga., treasurer.

By a unanimous vote President Yarbrough was directed to make application immediately for membership in the national association.

A committee consisting of Fred E. Gore, Southern manager of the Blue Diamond Coal Sales Co.; Grover Meinert of the Meinert Coal Co., Atlanta, and James S. McCarthy, field secretary of the national association, was appointed to assist the president and board of directors in the selection of a secretary.

Pocahontas Operators' Association

The association during the latter part of October was engaged in making preparation for another hearing in the freight rate case of the Southern Ohio Coal Exchange to be held at Atlantic City. Members of the association are deeply interested in this case, owing to the effect it will have on rates from the Pocahontas field into certain Western states.

Kanawha Coal Operators' Association

There was a 100 per cent attendance at the annual meeting of the association held in Charleston on Oct. 20. Directors were elected, officers to be selected later by the newly elected directors. On the roster of directors elected are the following: C. A. Cabell, general manager of the Carbon Fuel Co. of Charleston; C. C. Dickinson, of the Dry Branch Fuel Co. and other Dickinson interests at Malden; W. M. Wylie, general manager of the Boone County Coal Corporation, Sharples; John Snure, of the Kelley's Creek Colliery Co., Ward; F. O. Harris, Cannelton Coal Co. of Cannelton; H. L. Warner, of the Kanawha & Hocking Valley Coal & Coke Co., Cleveland; Lute Hornickel, of the Anchor Coal Co., Highcoal; A. B. Rawn, vice president of the Solvay Collieries Co. of Huntington.

The business meeting at which directors were elected was followed by a luncheon at the Kanawha Hotel, addresses being made by a number of the well known operators of the Kanawha Valley.

Obituary

James Redding, aged 56, owner and operator of the Dysart Coal Co., mine at Dysart, Pa., died recently at his home in Altoona. He was interested in mining for twenty years.

Henry A. Bastien, secretary of the Egyptian Iron Works, of Murphysboro, Ill., died recently.

P. J. Elliott, formerly a newspaper man of Columbus and later associated with Dan Cannon in the Cannon-Elliott Coal Co., a retail concern, died recently.

Coming Meetings

West Virginia Coal Mining Institute will hold its next meeting Dec. 6 and 7 at either Charleston or Huntington, W. Va. Secretary, R. E. Sherwood, Charleston, W. Va.

New England Wholesale Coal Association will hold its annual meeting Jan. 10, 1922, at Boston, Mass. Secretary, R. S. Townsend, 27 Kilby St., Boston, Mass.

Southern Appalachian Coal Operators' Association will hold its next meeting Jan. 27, 1922 at Knoxville, Ten. Secretary, J. E. McCoy, Knoxville, Tenn.

Pike County Coal Operators will hold their annual meeting Jan. 6, 1922, at Pikeville, Ky. Secretary, F. E. Miller, Pikeville, Ky.

The Coal Mining Institute of America will hold its annual meeting at Pittsburgh, Pa. Dec. 7, 8 and 9. Secretary H. D. Mason, Jr., Chamber of Commerce Bldg., Pittsburgh, Pa.

The Illinois Mining Institute will hold its fall meeting in the City Hall, Springfield, Ill., Saturday, Nov. 19. Secretary Martin Bolt, Springfield, Ill.

American Society of Mechanical Engineers will hold its annual meeting, Dec. 5-9 at the Engineering Societies' Building, 29 West 39th Street, New York City. Secretary Calvin W. Rice, 29 West 39th Street, New York City.